Report for the year 1975

Commissioner of Public Health

Western Australia

REPORT of the

Commissioner of Public Health

for the year 1975

Presented to both Houses of Parliament

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CONTENTS

Supplementary Reports—

LEGISLATION

During the year the following Acts were amended or introduced as detailed:—

1. *Health Act*

   (a) The maximum annual rate levied by local authorities for health purposes and maintenance of sewerage works and maximum fees for the registration of lodging houses and offensive trades were increased.

   (b) Authority was given to control the quality of air in insufficiently ventilated vehicle parking areas in buildings and to make regulations in relation to this matter.

2. *Friendly Societies Act*

   An amendment to widen the number of objects for which friendly societies may be registered.

3. *Health Education Council Act*

   Amended to reconstitute and increase the Council representation from eighteen to twenty-one members to reflect current community needs.

4. *Medical Act*

   The Schedule of licensed bodies in the United Kingdom and Republic of Ireland, showing primary qualifications, was amended to include two additional Universities and the accepted primary qualifications under which medical practitioners may be registered.

5. *Pharmacy Act*

   The amendment included the further defining of limitations as to interests in and places of business and trading by pharmaceutical chemists and disciplinary matters, including suspensions by and appeals to the Pharmaceutical Council.

6. *Dental Act*

   The amendment widens the number of organisations in which dental therapists may be employed.

7. *Radiation Safety Act*

   This Act was introduced, repealing the Radioactive Substances Act, to regulate the keeping and use of radioactive substances, irradiating apparatus and certain electronic products.

   Regulations were made or amended during the year, under the following Acts, as follows:—

   1. Chiropodists Act. The scale of fees in the Rules of the Chiropodists Registration Board, under this Act, was amended.
   2. Chiropractors Act. The scale of fees in the Rules of the Chiropractors Registration Board was amended.
   3. Health Act.
      (a) (Carbon monoxide) Regulations made limiting the concentration of carbon monoxide in building car parks.
      (b) (Venereal Diseases) amended to allow for payment of a fee to notifying medical practitioners.
      (c) (Meat Branding) Regulations amended to include a further health district.
   4. Nurses Act. Amendment was made to the fees for registration of nurses.

5. Optometrists Act. Minor amendment to the Rules made by the Optometrists Registration Board.
6. Pharmacy Act. Appendix B of the principal regulations was replaced by a further Appendix of fees listing fees chargeable.
7. Radioactive Substances Act. An amendment to more fully describe a technical condition resulting in maximum production of ionising radiation.

STATE HEALTH LABORATORIES

During the year Dr. Laurie retired after 16 years as Director. During his tenure of office there was a tremendous growth and extension of the State Health Laboratory Services, especially in histopathology. He has been sadly missed but his successor, Dr. V. Blackman, has already shown great promise in what has, since Medibank, become quite a difficult area.

The State Health Laboratory now provides a service for all non-teaching public hospitals in Western Australia. This has considerably strained its resources. A number of pathologists formerly engaged in private practice are now employed on a sessional basis in the non-teaching hospitals, and this system is working well.

There have been further developments at the Medical Centre and there is now a combined service incorporating elements of the Sir Charles Gairdner Hospital, the University of Western Australia and the State Health Laboratory in biochemistry and haematology. Microbiology continues to provide an essential public health function. It has been involved in work undertaken on behalf of the National Health and Medical Research Council, which is investigating the growing "take away" foods industry.

TUBERCULOSIS CONTROL

Dr. F. G. B. Edwards retired after more than 14 years excellent work as Director of the Tuberculosis Control Branch and 26 years in the service.

Tuberculosis Control remains very satisfactory. There has been a continual very gradual reduction in the notification rate in recent years, but in the absence of a compulsory x-ray programme, this is a less accurate measure of the rate of Tuberculosis. The diagnosis now depends very heavily on non-departmental doctors but the Clinic serves an essential role in confirming the diagnosis, follow of contacts and treatment.

Persons born outside Australia continue to contribute a disproportionate number of cases and it is interesting to note that among a group of 300 refugees from Timor there were 4 active cases of tuberculosis, as well as 5 previously treated cases, and a number with other pulmonary abnormalities.

EPIDEMIOLOGY AND SPECIAL SERVICES

Infectious diseases notifications showed very little variation from previous years apart from an increase in the number of cases of Infective Hepatitis. Although there were 24 cases of malaria reported, all cases originated from overseas countries.

Immunisation programmes continued despite staff shortages and the overall immunisation rate appears to be satisfactory.

VENEREAL DISEASE

The Venereologist-in-Charge, Dr. Newnham, won a National Health and Medical Research Council Public Health Travelling Fellowship and spent 3 months in England studying sexually transmitted diseases.

Attendances at the Clinic have continued to rise and have doubled since 1972. This gratifying increase in attendance is in part due to health education activities and a growing awareness among the public of the need to seek help and advice. The incidence of gonorrhoea is static but there has been an increase in the number of notified cases of syphilis. How much of this increase is real is not known, but it is most likely attributed to the increased activity of the Clinic and the increased co-operation of doctors both in private practice and in the teaching hospitals.

COMMUNITY HEALTH SERVICES

There has been a continual expansion of this Branch's activities to provide comprehensive health care throughout Western Australia especially to those areas in most need and often in the face of great difficulty. Specific funding has enabled this activity to include disadvantaged or needy people other than Aboriginals. The flexibility of the service and the ability and skills of its officers was demonstrated during the aftermath of the Darwin cyclone, medical screening of the Timor refugees and during and after the Port Hedland cyclone.

A typical innovation was the appointment of a Timorese Field Assistant who is now fully engaged in helping Portuguese migrants in the Fremantle area. This is a continuation of the policy adopted of involving the aboriginal community in the health care delivery system through community nominated camp nurses and field assistants. To further this community association and involvement the service has been regionalised.

Particular mention must be made that there was no maternal death among the Aboriginal population in 1975. Alcoholism and heavy drinking remains a problem and there is evidence that the Aboriginal community is itself facing up to the problem and some communities have banned alcohol completely in those areas within their jurisdiction.

The policy of sight, hearing and limb conservation has been continued and intensified in the Kimberley Region. Another innovation has been the introduction of Field Nurses with flying duties. These nurses are providing a field service as escorts in emergency evacuations within inter-regional areas or from the region to metropolitan hospitals.

COMMUNITY HEALTH PROGRAMME

The Community Health Programme is a new undertaking of the Public Health Department and the report by Dr. Holman should be read in full. Its aim is to place special emphasis on community based preventive health and rehabilitation services as an alternative to the traditional medical services and hospital in-patient care.

Community involvement is sought at all levels and the programmes vary in size and scale from portable units staffed by nurses in isolated areas to large community health centres staffed by doctors, dentists, nurses, physiotherapists, occupational therapists, social workers, visiting specialists, etc. There is close liaison between Public Health, Medical and Mental Health Services Departments.

CHILD HEALTH SERVICES

There has been a significant upgrading and expansion of all activities of the Child Health Services. The recruitment of paramedical workers has improved and introduced a new dimension into services offered to the school children of Western Australia.

There has been a continued steady improvement in perinatal and neonatal mortality rates which reflect improvements in the management of confinements, in the intensive care of the new born and in preventive health services generally in the first year of life. The very low figures which now exist compare favourably with other Australian figures but not with some overseas countries. Such comparisons are not

necessarily rewarding or meaningful but leave no room for complacency. Once again the effect of social class is indicated by higher attendences from the population likely to be least in need and emphasises the importance of getting out into the community to bring services to the community.

During the year school based services have been established in which a nurse actually works on the staff of a high school or a primary school. This programme has proved to be extremely successful and acceptable to the school, the children and to their parents.

The provision of funds from a number of sources has also permitted the introduction of new programmes such as pre-school health teams, the disadvantaged school programme and the assessment centre. A major innovation during 1975 was an increase in their responsibility of the school health sisters who now conduct vision, hearing and physical examinations. This transfer of responsibility from the medical officer enables him to assess and examine in more depth the children actually found with problems.

PHARMACEUTICAL SERVICES

This Branch continues to cope quietly with a great deal of important and essential work. Drug addiction and the use of illicit drugs is beginning to be a particular problem.

DENTAL HEALTH SERVICES

The aim of Dental Health Services is to provide free dental health care to the primary school population in Western Australia. A great deal has already been achieved. Regular clinics are provided to rural and remote areas and necessary dental treatment is also provided for adults.

A new training school at Mount Henry was opened during the year and the Warwick Training School commenced. About 70 per cent of the population is now serviced with water supplies containing adequate fluoride.

NURSING SERVICES

Miss Reid was appointed first Director of Community Nursing and her important role will be to co-ordinate and correlate the varied range of nursing activities involved in the community.

All members of the nursing service deserve commendation for maintaining high levels of nursing care in urban, rural and outback situations and Miss Beard pays a special tribute to Mrs. Fricker, Director of Nursing, Regional Hospital, Port Hedland and her staff for the magnificent manner in which they continued to carry out their duties during and after the Port Hedland cyclone.

OCCUPATIONAL HEALTH AND CLEAN AIR

The mining area continues to be the most important area in Occupational Health. The incidence of silicosis is falling but the number of men employed in industries where silicosis may occur is also falling.

For the second successive year there were no newly diagnosed sufferers from tuberculosis, which suggests successful control of what was formerly a very serious disabling and frequently fatal disease of miners.

Unfortunately there have been 6 new cases of mesothelioma in men who previously worked in the Wittenoom Asbestos Industry.

Vinyl chloride was exposed as a potential carcinogen during the year but an investigation of factories engaged in extruding polyvinyl chloride indicated no hazard to workers employed there.

Community and industrial noise is a major concern of the Branch and a great deal of progress has been made in its control. The number of persons involved in occupational health nursing is increasing and reflects increased concern on the part of the management in the day to day health care of their workers.

This Division producers particularly good results despite staff and equipment restrictions. Answering complaints from the public is time consuming but a vital role for its officers.

Monitoring of air pollutants generally has given satisfactory results and the Division is closely involved with other Agencies, Universities, other Government Departments especially Conservation and Environment, Bureau of Meteorology, etc. in developing modelling studies of a predictive nature for use in the planning of industrial development.

STATE X-RAY LABORATORY

The Physics Division of the State X-Ray Laboratory is responsible for the administration of the Radioactive Substances Act. During the year the Radiation Safety Act was passed by Parliament and is to be proclaimed early in 1976. The already very successful programme to protect the public from the affects of radiation will be continued and expanded under the new Act.

There is provision to control the use of "electronic products" which emit radiations not controlled by the previous Act, e.g. microwave, lasers, ultra-violet light, etc. A film badge monitoring service is provided.

Education is an important aspect of the Division's work. Poor standards of operation of radiation producing equipment and poor observance of radiation protection procedures are often the result of a lack of training in the use of equipment and a lack of knowledge of the properties and effects of radiation. The Physicist-in-Charge of the Laboratory has recognised the need to correct these deficiences by individual lectures and short courses directed at radiation workers.

TECHNICAL INFORMATION SERVICE AND LIBRARY

The increasing volume of work handled by the main library and its branches is clear evidence of its importance and value in promoting public health in Western Australia.

HEALTH SURVEYING BRANCH

The Health Surveying Branch is responsible for the management and control of all environmental health hazards relating to Human Health, not the concern of other Acts, e.g. Clean Air Act.

At the end of the year the first students trained at Tertiary level in Environmental Health graduated from the Western Australian Institute of Technology. This advanced and increased level of training owes a great deal to the Australia Institute of Health Surveyors (W.A. Division) and many others who have long recognised this need. The development of Diploma and post graduate courses are being studied.

Meat inspection, the supervision of abattoirs, hygiene of personnel, methods of storage and transport of meat and meat products is a continuing and most important activity. A special investigation relating to the methods of slaughter, transport and inspection of farm killed vealers was completed and revealed serious deficiencies. A plan for improved methods of slaughter and proper inspection was evolved and agreed.

There is increasing public awareness to the health hazards relating to spoiled and contaminated foods and there were over 250 consumer complaints.

Special and routine sampling programmes were continuing and the Branch is actively involved in the National Health and Medical Research Council Market Basket Survey which samples a wide variety of elements in the staple diet of Australians for contamination by pesticides, heavy metals, etc.

Newly established and proposed caravan parks and camping grounds and extensions to established parks were examined.

The increased popularity of caravanning and camping during peak holiday periods is causing concern due to over-crowding, malfunctioning of facilities, illegal use of Crown lands and occupancies of a semi-permanent nature. A special working party was set up late in the year with senior representation from other concerned departments, e.g. Local Department, Tourism and Lands.

STATISTICS BRANCH

The Statistics Branch provides a service for Medical, Mental Health Services and Public Health Department and for individual hospitals and other organisations.

The quality of the system continues to improve and sets a standard for the whole of Australia. During the year the Hospital Morbidity system was used to update and revise the State Health Council's Report on Metropolitan Hospital Needs. The report, though only several years old became out of date because of dramatic changes in the birth and immigration rates in Western Australia, in the population predictions and in the development of new areas of population in the metropolitan area. This revision has resulted in considerable changes in the Hospital Building Programme and a considerable reduction in projected capital costs.

Appendix 1

State Health Laboratory Services

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F.R.C.P.A., D.P.H., D.C.P.
Director

1. INTRODUCTION

1975 has seen some important changes in laboratory organisation and administration, which have affected every section in one way or another. Amongst these changes may be listed:—

(i) The retirement of the Director, Dr. Laurie, in April 1975. During his tenure of this office—16 years—he has seen the growth of the service from a relatively modest stage. In 1959 the laboratories performed 84 000 examinations, in 1974 (his last full year) 1 203 666 such tests: in 1959 there were three small branch laboratories (Albany, Bunbury, Wooroloo), and in 1974, 16 fully equipped branch laboratories with several smaller specimen collection posts. In 1959 no histopathology was done, biochemistry was minimal, and several sections now giving a wide service to large and small hospitals and practitioners not even thought about, e.g. toxicology, radioisotopes.

(ii) There was a trend for various organisations at the Perth Medical Centre to develop their own complete laboratories. This was wasteful of money and staff. In the interests of efficiency and economy, combined units of clinical biochemistry and haematology were established in 1975 to serve the interests not only of the State Health Laboratory but also the Sir Charles Gairdner Hospital and W.A. University. Staffs, equipment and finance were merged, and the development of the units subjected to advice obtained from a non-executive body, the Laboratory Users' Liaison Committee, consisting of representatives of the Minister of Health, the University of W.A., the Sir Charles Gairdner Hospital and the State Health Laboratories. These combined units have functioned successfully with little criticism, and are pointers to similar future reorganisations in neighbouring fields of laboratory work.

(iii) The introduction of the "Medibank" scheme in July followed by hospital participation on September 1st, led not only to a revolution in laboratory billing and financing, but also to the necessity of finding staff and equipment urgently for branch laboratories in six Government owned non-teaching hospitals in the metropolitan area plus some smaller associated units. There was also a need to co-ordinate arrangements with private pathologists so that patients would not be inconvenienced on entering a public hospital after their initial referral by a general practitioner or specialist to a private organisation. Eventually a number of private pathologists accepted sessional work in these smaller hospitals thus ensuring the necessary smooth transition from private care to public hospital. Courier services had also to be developed together with facsimile printing by telephone so that the Central Laboratories could provide a quick referral service to these hospitals for complicated or infrequently performed tests.

SCOPE OF WORK AND EXPANSION OF SERVICES

Statistics of the laboratories have been simplified by basing them on specimens received and not tests done. It is difficult to decide what exactly is a test—how many for instance in a so-called "full blood count". Numbers are liable to inflation by including quality control tests, development work, etc. It is a simpler and better

method to relate the demands on any laboratory to specimens submitted to it or collected on behalf of outside agencies. It is, however, virtually impossible to compare one section with another on the basis of numbers of specimens or tests. How can an autopsy compare with an ESR? These statistics must necessarily be used either to compare the work done in one section year by year or to compare any one section with a similar organisation in another independent laboratory.

Overall, the specimens submitted to the Central Laboratory rose in number by 34 per cent. Increases were general, i.e. not confined to the newly created combined units of haematology and biochemistry. Staff increases centrally were kept within the 2 per cent guideline indicated for expansion. Workloads increased by 19 per cent in branch laboratories and, of this, 9 per cent was due to the establishment of new metropolitan laboratories and 10 per cent to increase of work in previously established country laboratories. Six laboratories were established in the smaller metropolitan hospitals under State control—Swan Districts, Kalamunda, Armadale/Kelmscott, Bentley, Mount and Osborne Park, while collection services were instituted for Hawthorn, Woodside, Devonleigh and smaller units. No new branches were opened in country towns, although the plights of Roebourne, Newman and Tom Price were recognised.

2. COMMON SERVICES TO LABORATORY SECTIONS

It has been realised that a functional laboratory service of a large nature should consist of areas or sections specifically devoted to one or more aspects of patient care or community health, without overriding administrative problems, and a core of common services available to these areas without hindrance of their essential work.

ADMINISTRATION—FINANCE

The laboratories have been accepted by the Commonwealth Government as a Central Service within the hospitals section so that half the net operating costs excluding those relating to non-patient care, are met by Commonwealth sources, under the "Medibank" agreement. Fees for service are no longer raised against patients. Despite the formation of combined units of haematology and biochemistry, with necessary cost sharing of these services with the Sir Charles Gairdner Hospital, few problems have been met. Early in the year there were minor frictions between staffs working together on differing awards, but with patience and understanding, these have not become a major issue. The costs incurred by combined laboratories are divided *pro rata* amongst the user groups.

Staff housing gives rise to some concern. In some country areas Government housing is available; in others, not. Currently the laboratories are short of 19 houses or accommodation units. Some of those allocated are substandard compared with Medical Department housing, particularly as regards finishes, repairs, furnishings and airconditioning. As laboratory personnel in the country are patient and hospital orientated, it would seem a pity that their supply of accommodation differs so markedly from that enjoyed by other medical employees.

A further administrative change occurred with the transfer of the clinical photography section of the Public Health Department from direct control by the Commissioner and his staff, to administrative control by the laboratories. Their annual report now forms part of this laboratory report.

BRANCH LABORATORY SERVICE

This at the end of the year consisted of 27 branches, some of which were little more than collection posts also performing simple testing and referring to a larger branch, e.g. Kununurra/Wyndham and Collie/Bunbury. All branches were organised as one of the major sections of the laboratory responsible via the Principal Technologist to the same administrative control as other major sections. Methodology, supply services, instrumentation, staffing, leave arrangements, relieving staff and quality control are run centrally by the main administration so that a common standard of

achievement is attained throughout the service. This widespread organisation is, to our best belief, unique in the Commonwealth. All laboratories are visited by senior staff at least twice a year and in service training is now becoming organised.

Six new laboratories opened were Mount, Bentley, Armadale, Swan Districts, Kalamunda and Osborne Park in the metropolitan area. There is considerable pressure to extend our services especially in the new mining towns. Further development of the service should involve a degree of regionalisation with one major branch laboratory having certain responsibilities for smaller units in the same area of the State. The genesis of this already has occurred to a small extent, e.g. the dependence of Collie on Bunbury, Margaret River on Busselton, etc.

STORES

Some re-organisation of the stores and supply arrangements has been undertaken. Two extensive boards of survey have cleared much useless equipment from stores. It is intended that combined units draw requirements through the one area, and a tentative proposal has been considered to separate stores into two categories:—

(a) General—Items used commonly by many units mainly of a household nature.

(b) Technical—Items peculiar to laboratories.

These latter should be under control of a person with technical knowledge and subject to advice before purchase from interested section heads.

INSTRUMENT MAINTENANCE

This section has functioned well but is currently overwhelmed by work. All laboratories are much more sophisticated as regards apparatus than they were a few years ago. Apart from a few large specialised machines which enjoy maintenance contracts, all instruments whether centrally or in branch laboratories are serviced by one mechanic. His work, which is of a high standard, is suffering due to overload.

TRANSPORT AND COMMUNICATION

A courier service was instituted in the metropolitan area. Some units require the attendance of a person able to take specimens, others require simply a call from a driver to transmit specimens and equipment. This enables metropolitan branches to function adequately at a lower level of staffing than if a full service had to be provided locally everywhere. Reports are sent from central sources by facsimile printer and to many country branches by telex. This allows analysis and reporting within a few hours of specimen collection.

The use of road instead of air transport was furthered by insisting on monthly indenting by branch laboratories and overhauling the system of container return.

A mobile van was adapted for frozen sections and has proved invaluable in the metropolitan area where up to 12 frozen sections may be required in a working week.

The mobile laboratory has proved itself again in the survey situation.

STAFF

In 1975 the work load increased by 34 per cent centrally and 19 per cent in branch laboratories. New positions created, exclusive of those for the metropolitan branch laboratories taken over under the "Medibank" agreement, were contained within the 2 per cent guideline set down. At the same time, owing to changes in the labour field, the laboratories were enabled to fill items already created which had remained vacant for some time. Only this enabled the extra work load to be absorbed. Shortages of trained staff still occur in a patchy manner due to lack of suitable personnel; one may mention in particular cytology screeners, virtually unobtainable, and technologists except for recently qualified graduates.

Changes are shown below:—

Position	Recruited	Resigned
Pathologists	1	1
Medical Registrars	1	1
Senior Technologists	....	2
Technologists	25	11
Laboratory Assistants	15	12
Laboratory Attendants	36	18
Nurses	4	2
Clerks	8	5
Typists	2	1
Storemen/Watchmen	....	....
Couriers	2	....

With the granting of bachelor degrees to medical technologists on qualification, the older distinction between them and science graduates in biochemistry and microbiology has largely disappeared. In some States the name "medical technologist" for graduates has been changed to "scientific officer" or "medical scientist" and it is possible to categorise people as scientific officer (biochemistry), scientific officer (clinical pathology) etc. A welcome result from this is the ability to absorb specialist trained scientists like biochemists into specialist units centrally, releasing generally trained technologists for branch laboratory service where their wider skills are more usefully employed.

Important changes of senior staff are as follows:—

Dr. W. Laurie, Director, retired on 3rd April, 1975.

Dr. V. Blackman was appointed Director on 4th April, 1975.

Dr. W. de Boer, Pathologist/Cytologist, left on 15th January, 1975.

Dr. K. Williams was appointed Pathologist/Cytologist on 11th August, 1975.

Mr. A. Drummond, Principal Technologist, retired on 30th June, 1975.

Mr. D. Baker was promoted Principal Technologist on 13th August, 1975.

Dr. J. Russell, Medical Registrar, left on 1st August, 1975.

Dr. M. Mulcahy was appointed a full-time member of staff in Cytogenetics on 3rd November, 1975.

Mr. J. Browning, Medical Technologist Grade V, retired on 26th September, 1975.

SPECIMEN RECEPTION AND REPORT DISTRIBUTION

A wide overhaul of this system was undertaken with a marked reduction in excessive bookkeeping, photocopying, etc. A franking machine helped considerably and mail to country areas is bulked to avoid excessive postal charges. The use of couriers, and facsimile printers locally, and telex machines more remotely, has improved speed of communication, and the importance of confidentiality has been stressed in the usage of such machines.

LIBRARY

A good service has been maintained by Mrs. Davis and the staff of the Public Health Library generally. It must again be stressed that articles or books on technology are really part of bench procedures and should be purchased as is other equipment for tests.

COMPUTERS

The new mass spectrometer is associated with its own small computer, which stores the characteristics of over 1 000 drugs, thus enabling the machine to identify very quickly minute amounts of any of these drugs. The small computer associated with biochemistry has been improved by addition of more memory, but is really now not adequate for the volume of reporting required.

ELECTRON MICROSCOPY

A Level II technologist post was filled and training in preparative and handling work was commenced. While the electron microscope is still established in a combined unit with the University, it is intended that sections can be cut and material prepared by user units, e.g. virology and histopathology, before transfer to the electron microscope unit. In co-operation with the University, a freeze etching attachment was purchased.

QUALITY CONTROL

At the beginning of the year, the laboratories were engaged in two biochemical quality control programmes:—

(i) The Royal College of Pathologists of Australia. This involved the central biochemical section.

(ii) The Wellcome system run from U.K. The Central Laboratory and the larger branch laboratories sent results directly to London. The smaller branch laboratories had their results analysed by the Central Laboratory. Analyses are performed monthly.

Our laboratories have functioned well by international standards in these programmes, both on U.S. and U.K. based figures, and any small deficiencies in branch laboratories are quickly spotted.

In addition and in the absence of readily available international programmes, the laboratories instituted their own programmes in haematology and microbiology. Again, monthly requests to branch laboratories are made for analyses of selected material, and the results scored and analysed by central specialist sections. Both programmes have run well, to the stage when other laboratories in Perth are joining the system. It must be stressed that the aim and object of quality control programmes is not to run a league table with danger of relegation and recrimination, but to assist each participating laboratory in attaining and maintaining as high a standard as possible.

IN SERVICE TRAINING

With the increasing diversity and complication of testing, there is a real danger that personnel in branch laboratories will tend to lose touch with modern technology as found in Perth. In Service training and re-orientation has been a function of these laboratories on a relatively unorganised basis for some time, but the process is now being systematically developed and arranged.

During the year Messrs. Sivewright and Dagnia were undertaking courses in business administration, and Mr. Fergie obtained a B.A. degree.

LABORATORY BUILDINGS

Shortage of space is still a problem. Delays in completing the North building in the Perth Medical Centre site has meant overcrowding and hasty improvisations in the South building to house a variety of units not originally intended to function there. The older hutted accommodation has still had to be used. Staff facilities are consequently poor, almost non-existent as compared to most hospitals.

Peripherally in the metropolitan area laboratory accommodation is extremely restricted in such hospitals as Osborne Park, Bentley and Kalamunda, and poor in Collie.

SPECIAL ASSIGNMENTS AND SURVEYS

The laboratories carried out pathology testing for Community Health at the following places:—

Port Hedland
Carnarvon
Onslow
Albany
Metropolitan Area

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aimed chiefly at the Aboriginal population. Some of these surveys from the laboratory view point are fairly costly. For example, in Port Hedland in four weeks 115 people were subjected to tests, and in Onslow in nearly three months (6th October–4th December) 340 people.

In addition, the laboratory tested 1 687 in Merredin in ten days for the local survey and co-operated in the latest Busselton survey.

TOURS AND CONFERENCES

The following personnel attended conferences or undertook study tours:—

Miss J. Jenkyn—Study of Dustmites, Adelaide. Cytogenetics, Adelaide.

Messrs. Sivewright and Corner—Institute of Medical Technology Triennial Conference, Melbourne.

Miss Cheney and Mr. Saunoris—International Haematology Conference, London, U.K. (Paid own fares).

Messrs. Dusci and Hackett—Mass Spectrometry, Sweden. (Paid by commercial sources).

Mr. Vlatko-Rulo—Home Office, U.K., Forensic Laboratories.

The laboratories are well enough appreciated to have had to supply three members to the Commonwealth Pathology Working Party on Laboratory Accreditation, viz:—

Professor D. Curnow—Sole representative of Australasia Association of Clinical Biochemists.

Mr. A. Drummond—Sole representative of Australian Institute of Medical Technologists.

Dr. V. Blackman—State representative.

Dr. Mackay-Scollay was a nominated representative of the Standards Association of Australia DS3 Committee and the N.H. and M.R.C. Food Microbiology Sub-committee.

Dr. J. Hilton was Allan and Hanbury's guest lecturer at the Biennial Conference of the Aviation Medical Society of Australia and New Zealand.

3. REPORTS BY SECTIONS

(A) DIVISION OF MICROBIOLOGY

The work of the Division continued to increase in 1975—26 per cent overall. In virology, advances in laboratory techniques and the understanding of human virus infections have necessitated greater sophistication in laboratory diagnostic procedures. Considerable developmental work has also been necessary to keep pace with the growing demand by clinicians for virus investigations over an ever increasing range of tests.

Immunological methods have come increasingly into prominence as diagnostic tools in the diagnosis of disease, whether bacterial, viral, helminthic or mycological.

Microbiology is still very much a labour orientated discipline, but automative procedures, particularly in the rapid diagnosis of infection, are reaching a stage where such techniques must be seriously entertained. The cost factor is very much involved, however, because automation requires expensive equipment which cannot always be offset by a reduced need for experienced staff.

Microbiology—Quality Control

1975 saw the introduction of a microbiology—quality control programme designed to assess and, where necessary, to raise the level of diagnostic clinical bacteriological expertise, particularly in the branch laboratories. It is a measure of the success of this scheme that two of the major teaching hospitals away from Perth Medical Site have joined in the programme.

Microbiological Broadsheets and the "Micro-Digest"

Another innovation during the year was the preparation and issue of Microbiological Broadsheets. These were prepared by senior members of the Division and

were designed to lay down standard recommended procedures for clinical diagnostic bacteriology throughout the Services. Previously issued Broadsheets should be constantly reviewed and appropriate changes made from time to time. These Broadsheets are intended to replace the Services' handbook as far as microbiology is concerned.

Hand in hand with the Broadsheet publications the Division issues a "Micro-Digest" containing up to date information concerning medical microbiology. These news sheets issued each month are made up of contributions both from the seniors in the Division at Central Laboratories and from workers in branch laboratories.

Accommodation

The paucity of accommodation for the Division in the South block of the laboratories continues to cause considerable inconvenience. The situation has been aggravated by the expanding work of several of these sections. Expansion in the virus field has resulted in considerable overcrowding. As also it is appreciated that the North Block will not be completed within the next three years so the strain on available accommodation can only increase. Removal of the media preparation section to factory type accommodation outside the Perth Medical Centre is a possible method of relief for other commitments.

Staff

In the present economic climate it is perhaps inevitable that staff numbers at all levels should have been restricted to a growth rate far short of the increased work load being experienced. It must be stressed that harmful effects on the efficiency of the laboratories will inevitably result if the situation deteriorates further.

Hospital Hygiene and Control of Infection Unit

This section has become established as a separate unit following demands for such a service. There has been a marked expansion in this work and the small staff available are fully committed. The restricted service in the past has contributed to the perpetuation of less than adequate prevention and control of infection measures taken in hospitals.

Their work includes the investigation of outbreaks of cross-infection in hospitals (both in the metropolitan area and in the country districts), the examination of disinfectants with a view to establishing standards of practice in hospitals and the surveillance of sterilizing efficiency. The phage typing of *Staph aureis* strains received from all laboratories in the State totalled 3 152 during 1975. This is a valuable service enabling epidemiological studies to be supported by precise bacteriological findings in preventing and controlling cross-infection in hospitals.

CLINICAL BACTERIOLOGY LABORATORY

During the year specimen numbers increased by 82 per cent above 1974 totals. The unit provides a comprehensive clinical bacteriology service for general practitioners in the metropolitan area as well as those in the country districts without ready access to hospital laboratories. It also serves as a reference laboratory for definitive bacteriology.

For convenience, the bacteriological work carried out in the V.D. Clinic laboratory has been regarded as an extension of the clinical bacteriology section.

Meningitis

Several cases of meningococcal meningitis occurred in widely distributed areas. Pharyngeal swabs of the contacts were submitted by the country laboratories concerned. N.meningitidis was isolated from two of the contacts along with several doubtfuls which were biochemically meningococci but failed to agglutinate with antisera. Citrobacter sp. was isolated from another case of meningitis.

Family Planning

Routine bacteriology has been carried out on patients presenting at Family Planning Clinics in the metropolitan area. An occasional case of gonorrhoea has been uncovered but the association of Candida albicans with vaginal discharge has been a predominant finding. The work in this field, to be meaningful, requires closer liaison between laboratory and clinic than has existed; in particular, the heavy load of bacteriological investigations are carried out without an analysis of their usefulness in therapy regimens. Approaches are being made to the clinicians in the expectation of overcoming these defects and also to extend the work on a proportion of patients in isolation of Chlamydia to establish this micro-organism's aetiological role in urogenital lesions.

Reference Bacteriology

A feature of the investigations made in the section has been the increasing use of the clinical bacteriology reference service for the final identification and serotyping of strains of bacteria isolated in branch laboratories from clinical specimens. By its nature this work is time consuming but provides an obvious need.

VIRUS LABORATORY

The accompanying histograms show the distribution of the various virus infections diagnosed in the laboratory during 1975. This presentation is more meaningful than the customary table listing virus isolations and positive serological tests.

Not only has there been an increase in the work undertaken by virology, as reflected in the figures of specimens examined, but considerable developmental work has been pursued with the intention of keeping abreast of current developments in virology and anticipating future needs in this field.

Viral Congenital Infections

An important modern aspect is the monitoring of congenital viral infections; up to the present there has been no co-ordinated effort in the State to diagnose infections of the foetus and the neonate or to follow such potential malformations in the childhood population.

Recent laboratory work concerning rubella infection in the pregnant woman has concentrated on the identification of specific rubella IgM by a practical routine test. Previously, techniques were time-consuming, expensive and could only be used in selected cases. With the introduction of density gradient centrifugation, together with methods for removing IgG from serum, the tests have become routine practice. This developmental work has immediate application to the recognition of other congenital infections particularly cytomegalovirus disease and toxoplasmosis.

Chlamydia and Other Virus Infections in the Venereal Disease Clinic

The chlamydial work involving a prospective study in the Venereal Disease Clinic patients has progressed in advance of other laboratories within Australia and data is now available on 2 500 patients and the results are being analysed for early publication.

Other viruses, particularly herpesvirus type 2 and cytomegalovirus, have been studied, the former with the long term object of assessing its association with cancer of the cervix.

Infectious Mononucleosis

The standard Paul Bunnell test used in the diagnosis of infectious mononucleosis fails to become positive in a number of patients. As many of these cases are due to infection with Epstein-Barr virus and as the appropriate immunofluorescence tests are available in the virus laboratory, a programme has been commenced to apply these more specific and sensitive methods for the diagnosis of this condition. The role played by cytomegalovirus in this syndrome is also under study.

Influenza

As part of the laboratory's association with the World Health Organisation Influenza Centre in London a collaborative study has been undertaken to characterise the distribution of antibody to virus sub-types of Influenza A virus. This investigation is of importance to the world picture of the epidemiology of influenza.

The epidemic of influenza during 1975 was late in arriving and was modest in its extent. Cases were first recognised in late August with a peak in October and a slow decline to the last isolation which was made in December. Influenza B coincided in timing almost exactly with Influenza A.

The number of cases diagnosed is unfortunately a poor measure of the extent of any epidemic. While every effort is made to encourage general practitioners and hospital clinicians to provide specimens for virus isolation early in upper respiratory tract infections, there is no stable monitoring programme available at the moment.

Herpes Simplex Disease

Infection due to herpesvirus has shown considerable increase over previous years but the apparent increase in incidence may be fortuitous as the popularity of the tests may have increased.

Viruses Causing Gastroenteritis

Rotavirus is now well recognised as an agent causing gastroenteritis in infants. In conjunction with Princess Margaret Hospital and with Dr. Ian Holmes in Melbourne two studies were undertaken during the year to assess the prevalence of this virus in Western Australia. The virus cannot be grown in any laboratory system and at present may only be recognised by electron microscopy.

The study undertaken in co-operation with the Children's Hospital was completed in the latter part of the year and the results are being analysed with the intention of publishing a paper on the results. The evidence clearly points to rotavirus, with and without the association of adenovirus, as a major cause of gastroenteritis in infants and the indications are that the infection occurs as readily in the tropics as in the more temperate climate of the south west of the State.

Work is proceeding to devise a more convenient immunological method of diagnosing rotavirus infection using immuno-osmo-electrophoresis and preliminary results so far obtained are encouraging.

Mumps

A considerable epidemic of mumps occurred in the second half of the year, and at the end of 1975 there was no indication that the peak had been reached as the number of specimens being submitted was still on the increase.

A feature of the epidemic has been the large number of cases presenting with meningitis and meningoencephalitis and the absence of parotitis. An analysis of the case histories of 38 patients with positive isolations and/or serological confirmation of the diagnosis has been made. These showed that of 16 patients on whom lumbar punctures were performed the CSF white blood cell counts ranged between 23 and 1 000 per cubic millilitre with an average figure of 370. The cases followed no geographical distribution. A full report of the epidemic will be prepared for publication.

The epidemic raises the important issue of preventative vaccination. The U.S.A. mumps immunization programme which started in 1969 resulted in a reduction of 88 per cent of cases over six years where in place of an estimated 60 000 only 12 909 cases were reported.

MYCOBACTERIA LABORATORY

For the first time for several years an increase in routine work (10 per cent) has occurred. As the incidence of tuberculosis and allied infections is not rising the increase in the State's population is probably the contributing cause.

Developmental Work

Methods have been developed for more accurate species typing; biochemical test procedures have been modified and instant thin layer chromatography of extracts from the organisms has been done. Preliminary results indicate that this technique is helpful in species typing of the more difficult strains. It is hoped in 1976 to complete a catalogue of I.T.L.C. results for all our reference strains.

All atypical strains are now serotyped on a routine basis which helps epidemiological studies related to the disease entities, i.e. glandular involvement in children aged 1–8 years and pulmonary lesions of adults.

National and International Collaboration in Mycobacteria Work

The report of the International Co-operative Study on the Mycobacterium tuberculosis complex was published during the year and the laboratory's standing in this exercise was high.

The laboratory continued to serve as a reference laboratory for mycobacteria strains isolated in other Australian States and engaged in a current programme of assistance to C.S.I.R.O., Melbourne. This involves the identification and serotyping of strains of bovine origin in a search for a suitable micro-organism for the preparation of a tuberculin. It is proposed that such a tuberculin be prepared to assess infection in cattle as part of the Commonwealth tuberculosis eradication programme.

MYCOLOGY LABORATORY

The work of this section has increased by 70 per cent over the previous year.

Many innovations have been introduced in the mycology laboratory in 1975, e.g. in the field of yeast identification. The isolation of yeasts from clinical materials is an everyday occurrence in the diagnostic mycology laboratory, but their identification as well as their significance may pose problems for the technologist and physician. Since the introduction of antibiotics, steroids, antimitotic and immunosuppressive drugs, yeasts have become a major group of "opportunistic" pathogens. The diagnostic mycology laboratory is now able to identify twenty different species of yeast which belong to five different genera. Identification procedures for species other than Candida albicans have been extended so that fuller accurate identifications are possible.

The mycology laboratory this year commenced an immunological service, introducing tests for two serious systemic diseases. The first of these is a test for Cryptococcosis —a latex agglutination technique to test for Cryptococcus neoformans antigen in suspected sufferers. This should prove useful both diagnostically and prognostically. we hope this will be a great aid to country physicians in diagnosis of suspected cases of Cryptococcosis.

Of equal significance has been the introduction of an immunodiffusion test for the diagnosis of Systemic Candidiasis. This disease is assuming increasing importance in debilitated patients and those suffering from Hodgkin's disease, Lupus erythematosus and also in patients on immuno-suppressive therapy or receiving radiotherapy. They require regular monitoring for signs of clinical infection. In patients in whom fungal infections are suspected or in patients who are in hospital, monitoring on a weekly basis has become desirable.

More efficient testing and identification of Actinomycetes (both aerobic and anaerobic), have been introduced to the laboratory in 1975. These methods are in line with those used at the Center for Disease Control in Atlanta, Georgia. During 1975 three cases of Nocardiosis were identified and two cases of Actinomycosis. Of the latter, one was a jaw infection following tooth extraction and the other was a lacrimal canaliculitis.

Cryptococcosis is probably not diagnosed as frequently as it occurs. We have had two cases this year—one, cryptococcosis of the bone in a patient with no underlying disease, and the other a patient suffering from systemic cryptococcosis and meningitis with an underlying Lupus erythematosis.

An infection of interest was in a chest patient not responding to usual treatment. The fungus involved and repeatedly isolated from this patient's sputum was a species of Drechslera, which is related to some common plant pathogens.

One case of Sporotrichosis this year was of particular interest because of its unusual location. The organism was producing raised lesions in the groin, quite atypical of Sporotrichosis.

ENTEROBACTERIACAE LABORATORY

The work undertaken in this area includes clinical diagnostic examinations for bacteriological and parasitic pathogens. It also provides a reference service for serotyping of Salmonella and Shigella isolated anywhere in the State.

This clinical area, of course, is inseparably associated with the Public Health enterobacteriology laboratory, providing as it does the only food hygiene bacteriological service in Western Australia. It has been involved in work undertaken on behalf of the Food Microbiology Subcommittee of the National Health and Medical Research Council for investigation of the growing "take-away foods" industry. A report on this study will be issued by the Council when the work is completed which is expected to be in 1976.

As an extension of the public health aspects of the work of this laboratory, considerable investigations have been pursued into the potential health hazards associated with the tipping of household and factory garbage at landfill sites in the metropolitan area. This practice, especially where lakes in the coastal plain districts are concerned, has resulted in contamination by Salmonella of the urban environment. This contamination has been enhanced and extended by the dissemination of these microorganisms by seagulls.

The seagull population is increasing greatly in the metropolitan area and as they have been shown to carry Salmonella they present a hazard to the open water storage reservoirs of metropolitan Perth. As long as garbage is deposited in the landfill sites the gull population will continue to prosper and multiply and the potential health hazard may be expected to increase proportionately. Culling of the gull community by destroying eggs in their main nesting grounds, which are on Carnac Island, might be an immediate contribution to solving this problem.

Food Poisoning

No major epidemic of food poisoning was recorded through the year but minor outbreaks due to a wide range of Salmonella serotypes were found. The serotypes incriminated coincided closely with those isolated in abattoir effluents and the assumption is that infection is principally related to meat and meat products, though the part played by man's direct and indirect contact with feral and domesticated animals is well illustrated by the epidemiological investigations on Rottnest Island. On this island, over the years 1972 to 1975, Salmonellosis has been diagnosed due to two serotypes—S. javiana and S. waycross—which number among the 30 different types isolated during the studies from horses, poultry, marsupials as well as birds and reptiles. The result of this work is being prepared for publication.

Human cases of infection with Shigella and Enteropathogenic types of E. coli were of the same order of magnitude as in 1974.

Parasitology

Of parasitic infestations hookworm continued to be evident at a high level in the tropics. Giardiasis, with 919 laboratory diagnosed cases, indicated an increase of 19 per cent over the previous year and although the majority of patients were from the north of the State, 177 were diagnosed in the metropolitan area.

As would be expected from their geographical origin the Timorese evacuees, who underwent routine medical and laboratory investigations, provided evidence of a host of parasitic infections. Only two refugees harboured Salmonellae.

Waters Laboratory

A comparative trial of membrane filtration in parallel with MPN tests of bacteriological quality of water supplies was completed. Although comparable figures of bacteria were obtained by both methods in the case of chlorine treated potable waters, the membrane filtration when applied to untreated waters was erratic and actually misleading when Pseudomonas spp. were present. It is being suggested to the Metropolitan Water Board that the routine methodology of water examinations may be altered in the light of the findings.

The quality of drinking water in some country districts gives cause for concern at times, particularly in the Pilbara. Specimens are submitted to Perth often in ignorance of standard sampling procedures and the authority for their submission is sometimes questionable. The Health Department is aware of these problems and is taking steps for a more meaningful and concerted programme of microbiological water examinations. While all waters are at present examined in the Central Laboratory it may be possible in the near future for some country laboratories to undertake testing on a regional basis.

MYCOPLASMA LABORATORY

Requests for mycoplasma investigations of respiratory tract infections fell away during the year. The only isolation of Mycoplasma pneumoniae was made in mid January from a young woman with unresolving lobar pneumonia. The isolation of M. hominis from the tracheal aspirate of a two month old boy with persistent chest infection was of interest since the infection might have been contracted at birth; unfortunately follow-up specimens from mother and child for culture and antibody studies could not be obtained. Seminal fluids from sterility clinic patients are tested for mycoplasmas as part of a wider microbiological investigation and made up most of the urogenital specimens; about 5 per cent yielded M. hominis. In contrast, the few urethral specimens from males that were tested yielded T-strain mycoplasmas only in 40 per cent and only occasionally was M. hominis grown from this source. This difference could perhaps be a consequence of a difference in pH since the normally acid uretha would favour the T-strains but they would be susceptible to the alkalinity of seminal fluid. M. hominis, on the other hand, apparently is not so susceptible to pH—this is quite speculative but perhaps further investigation of both urethral and seminal specimens from the same patient is warranted.

MEDIA PREPARATION

The media preparation section has provided culture media to the branch as well as to the Central Laboratories, and to other users at the Perth Medical Centre.

Accommodation continues to present administrative problems and the long term solution may only be expected when the unit is located in a factory-type building. This move has been mooted many times but suitable rented factory premises have not yet been found. An additional advantage of moving the media unit away from the basement accommodation in the South block is that this area represents valuable space which could be utilized to the better advantage of laboratories as a whole. The modular construction does not suit a factory type operation such as media making. Also the autoclaves, never fully satisfactory since installation, will urgently require modifications which it is understood would be difficult to achieve in the sterilization area.

One important casualty of the lack of adequate space for media perparation has been the difficulty to provide a comprehensive and rigid system of quality control which, of necessity, is undertaken by other microbiological sections on a "user" basis.

Three visits were paid to the Eastern States by Dr. Mackay-Scollay in 1975 to attend meetings of Standards Association of Australia DS3 Committee and the N.H. and M.R.C. Food Microbiology Subcommittee.

In addition to visits to the Division paid by many microbiologists attending the Annual General and Scientific Meeting of the Australian Society for Microbiology, which was held in Perth in May, the following also visited Microbiology:

Professor M. Bergdoll from Chicago, an authority in Staphylococcal enterotoxin.

Professor A. J. Zuckerman, a renowned researcher on hepatitis, from London.

Dr. V. G. Alder, a prominent worker in the field of cross-infection.

Professor M. Pollard, an eminent virologist from the Notre Dame University, U.S.A.

(B) CLINICAL BIOCHEMISTRY SERVICE

The most important development in this area during 1975 was the decision by the Public Health Department, the Sir Charles Gairdner Hospital and the University of Western Australia to create a combined service laboratory of clinical biochemistry. The new Clinical Biochemistry Service, Perth Medical Centre, came into being on July 1st, 1975, following the success of the less formal joint activity which began in May 1974.

Laboratory Space

The Service is housed in part of the ground floor of the south-east block (Block K). This space is inadequate and will restrict development of the Service until the second floor of the north-east block is available.

Staff

The staff of the Service consists of employees of the State Health Laboratory Service and of the University integrated in all respects in the day to day running of the laboratory. Staff morale is now high and all members are demonstrating a loyalty to the ideal of a combined service. The service is directed by the Head of Service, Professor David Curnow, and by the biochemist, Dr. Matt Dick. There was one vacancy for a senior lecturer.

Equipment

The two six-channel analyzers were received late in the year and are being installed and interfaced to the PDP-11 computer.

Work Load

The two major sources of work for the service are the Sir Charles Gairdner Hospital and the State Health Laboratory Service. Minor amounts are derived from pathologists in private practice, from the Repatriation General Hospital and from clinical research projects.

The total work load in 1975 was 71 534 samples, an increase of 28 per cent on 1974.

Overtime

Due to the increasingly acute nature of the hospital activities and to the pressure within the hospital to decrease average patient stay, the amount of out-of-hours work has increased greatly during the year.

Surveys

The laboratory carried out the biochemical analyses for the Cunderdin survey and other surveys conducted by the Community Health section. It played a major role in conducting the 1975 survey at Busselton, and in analysing the 3 300 blood samples obtained.

New Developments

New assays in the neurochemical and porphyrin fields have been developed and many other methods have been revised.

Quality Control

The service continues to have a creditable record in its results in national and international quality control schemes.

S.I. Units

The new units were introduced after careful planning and the change was made with little disruption in the service and with scarcely any complaint from the medical profession.

Accreditation

The Head of the Service has been a member of the Joint Pathology Working Party on accreditation of laboratories, which has produced a "grey paper" for consideration by all parties.

Education and Training

Regular staff seminars and lectures have been held during the year and senior staff members, notably Dr. Dick, have played a major part in evening courses for professional bodies. Two members of staff attended training courses in Sydney.

Visitors

Notable visitors to the laboratory have been Professor Wilkinson, Professor Rubin, Professor Laurell and Dr. Grant Pattison who spent part of his study leave in Perth.

(C) TOXICOLOGY SECTION

The use and abuse of drugs has produced a new discipline in medicine—the study of iatrogenic disease. Toxicological analyses are done not only for suicidal drug overdosage, homicides and other forensic purposes, but mainly for monitoring therapy, treatment of accidental overdosage and investigation of disease.

The number of specimens received for analysis increased significantly during the year, although we had lost the services of a chemist. The largest increase was in the drug field, where many requests were received for narcotic screening, drug overdose screening and drug monitoring. With the introduction of newer type antiepileptic drugs, doctors have been asking for the analysis of three or more different drugs on the one specimen. This has called for a revision of the methods used, so that all these drugs can be monitored with the required sensitivity on the smallest amount of sample.

Throughout the year new methodology and quality control studies were improved. Work is needed in the updating of our drug library to keep the section informed of the latest drugs available as well as the methods and techniques of analysing them.

To date, this section has published five scientific papers, two papers having been accepted for publication during 1975.

The gas chromatograph—mass spectrometer received during the year has already proved to be a great asset because of its ability to give rapid, precise and accurate identification as well as sub-nanogram quantitation of a number of compounds.

The "on call" service has been increasingly used, especially by Fremantle, Princess Margaret and Sir Charles Gairdner Hospitals. Approximately two or three call-outs per week were received for urgent drug screening on patients. With the advent of Sir Charles Gairdner Hospital becoming a casualty centre, we can only expect this service to increase.

A number of lectures were given by the staff to various establishments and institutions throughout 1975.

The section consisted of three chemists and one laboratory assistant. The section is now working to capacity.

(D) COMBINED HAEMATOLOGY SERVICE

Formation of Combined Haematology Service

The important event of 1975 was the formation of the Combined Haematology Service, Perth Medical Centre, by the merging of the Department of Haematology of the Sir Charles Gairdner Hospital and the Haematology Department of the State Health

Laboratory Services. The two Haematology Departments previously sited in different areas of the Perth Medical Centre, were moved to a newly renovated laboratory area on the 1st Floor, A Block, Sir Charles Gairdner Hospital in January 1975. Initially the only rationalisation was the merging of the night and weekend haematology and transfusion emergency services. However, with the appointment of a second haematologist as Head of the Combined Service in March 1975 there was complete integration of the separate Haematology Departments and merging of the two groups of medical technologists, with rationalisation of staff and equipment. The Head of the combined service is Dr. J. L. Raven, M.R.C.P., M.R.C.P.E., F.R.C.P.A.

Staff

The total staff includes 4 doctors (all hospital employed), 13 trained medical technologists (6 employed by S.H.L.S., 7 by S.C.G.H./University of W.A.) and 9 other secretarial, clerical and technical staff members (5 employed by S.C.G.H./University of W.A., 4 by the S.H.L.S.—a total of 4 doctors, 10 S.H.L.S. employees and 12 S.C.G.H. and University of W.A. employees).

Functions

(i) The provision of a laboratory haematology service and blood transfusion unit for Sir Charles Gairdner Hospital.

(ii) The provision of a reference laboratory haematology and blood transfusion service for metropolitan and country laboratories of the S.H.L.S. and the maintenance of a haematology quality control programme.

(iii) The provision of clinical haematology service for the S.C.G.H. and a reference service for the metropolitan laboratories of the S.H.L.S. Dr. Raven has an allocation of 6 beds for the management of in-patients.

(iv) Teaching—Medical students, technologists and nurses, plus post graduate teaching.

(v) Repatriation Hospital—a consultant service.

(vi) Research—Dr. Raven: radio-isotopic assay of vitamin B_{12} and folate, detailed investigation of haemoglobinopathies.
Dr. Kennett: ferritin assay.

Work Load

The important change has not been so much an overall increase in work load but a vast increase in certain areas and the development of investigations not previously carried out either by the Hospital/University or S.H.L.S. Departments. For example, new tests available since February 1975 include serum intrinsic B_{12} factor antibodies (blocking and binding), dual isotope Schillin's test, isopropanol test for unstable haemoglobin, red cell 2:3 DPG assay, O_2 dissociation curve, serum muramidase (lysozyme), esterase cytochemical stains, N.B.T. test, plasminogen assay and fibrin plate. It is hoped to proceed with new advanced testing in the coming year.

Increase in Work Load (since February 1975)

	per cent
Coagulation tests	26
Prothrombin times	33
Blood groups	15·5
Pints of blood cross matched	15·3
Bone marrow aspirates	200
Coagulation factor assays	500

Buildings and Equipment

These are adequate at the moment, but the present site of the Haematology Combined Unit is only available for a few years and plans are being formulated for a permanent home in the new laboratory complex.

(E) RADIOISOTOPE UNIT

As in 1974, 1975 saw a considerable increase in the workload, with a 64 per cent increase in the number of specimens received. This was due in part to the advent of "Medibank" in August and a greater awareness by Medical Officers of the tests now performed by the Radioisotope Unit. The increase in specimens received overall did not come from any one particular area. Tests of feto-placental function requested by country doctors and general hormone assays requested by general practitioners increased notably throughout the year.

During 1975, as in 1974, the Radioisotope Unit did not have any staff increase. The additional workload was handled by further partial automation of radio immuno assay procedures and with the acquisition of a fully automated 1 000 sample capacity Gamma Counter. Further increases in workload or the undertaking of further new assays will indicate a review of staffing and perhaps further automation.

(F) HISTOPATHOLOGY AND CYTOLOGY

1975 has shown an unprecedented increase in workload in the department and foreshadows an even larger increase for 1976. While surgical biopsies increased by 37 per cent over the year, the greatest increase occurred only after "Medibank" in August. The yearly work rate was similar to previous years with a 25 per cent increase for the first seven months, i.e.:—

	1974 Cases	1975 Cases
January 1–July 31	3 576	4 496

After August, biopsies totalled over 1 000 per month. The estimated load for 1976, based on the figures of the last four months of 1975, is in excess of 16 000 biopsy cases (an increase of 60 per cent over 1975).

At all levels the staff numbers have not increased. Dr. W. G. R. de Boer resigned in January 1975 to assume his new post as Director of Pathology Services, Southern Memorial Hospital, Victoria. Dr. V. Blackman was appointed Director of the State Health Laboratories in April. These two members were replaced by Dr. A. Laden in January and Dr. K. Williams in August. Dr. D. McCully was appointed in charge of the department from April.

The technical staff in histopathology/forensic pathology preparation and cytology is static.

Histopathology/Forensic	Technologists	Laboratory Assistants
1974	5 + (2 P/time)	7
1975	6 + (1 P/time)	7
Cytology	Technologists/Cytotech.	Trainees
1974	5 + (1 P/time)	1
1975	5 + (1 P/time)	1

There has been an increase of one typist for cytology reports and the clerical staff for filing of reports, indexing etc., has remained at one.

The necessity of supplying a frozen section service to the metropolitan hospitals as well as the close by country centres (Northam, Pinjarra, Narrogin, Bunbury) was partly solved by the acquisition of a van fully equipped with cryostat. This piece of equipment has been well utilised and the facility of having optimal apparatus to perform frozen sections is appreciated by all the pathologists.

In view of the problems occurring late in 1975 it is obvious the staff situation early in 1976 has to be improved if the fast, high standard of reporting from the department is to continue.

CYTOLOGY

There was an increase of 36 per cent in specimens submitted, entirely due to a greater volume of cervical and vaginal cases. Currently, a monthly rate of 1 200 pressages an annual total of 15 000.

Staff has not increased, but there has been considerable increased pressure on certain individuals as the loss of trained staff must be made good by the employment of untrained juniors. The only course extant in W.A. is at the Mount Lawley Technical Institute and there is a dearth of trained people available. Our position will remain grim until the three juniors now employed attain some level of expertise. Cytological screening is not learnt by technologists in their training course.

Some of the increase in work has been due to family planning and female guidance clinics. This work is not likely to decrease.

Equipment

With the vastly extended activities of both histopathological and cytological staff no new departures were introduced in the year, and equipment demands were minimal. Towards the end of the year the planning of a preparative room for electron microscopy specimens was done.

(G) FORENSIC SERVICES

While the number of autopsies at which forensic assistance was requested did not increase there was a wider involvement of forensic pathologists in other fields—advice on drug and alcohol problems, teaching of undergraduates, post graduates, police officers and ancillary health personnel. The service to country areas was maintained, but less was spent on chartering aircraft than previously. Adequate liaison with forensic toxicology (at the Government Chemical Laboratories mainly, but to a lesser extent at our own clinical toxicology unit), the Crown Law Department, Police and our own forensic serology was ensured. The vast bulk of autopsies takes place at the Perth Medical Centre (1 123 out of 1 241).

Staff

Dr. Laurie on his retirement was employed temporarily as a forensic pathologist and has proved valuable in this field. The registrar (Dr. Russell) left and has not been replaced. The professional staff have managed adequately, but there are still difficulties in the field of mortuary staff due to the necessity of providing a 24 hour a day cover.

Research

Dr. Hilton continues to take part in a collaborative investigation of Sudden Death in Infancy Syndrome, with the publication of papers on the immunology of this condition and the organisation of the study.

(H) SEROLOGY AND CYTOGENETICS

SEROLOGY LABORATORY

In conformity with other areas such as U.S.A. and U.K., the Wassermann Reaction testing was ceased during this year and the Treponema pallidum Haemagglutination Test (T.P.H.A.) was added to the range of tests for venereal disease. Each serum is now tested with the V.D.R.L. test as the screening test and the majority of sera are also tested with at least one of the more specific tests (F.T.A. (abs) test and/or T.P.H.A. test).

A document facsimile system was put into operation during 1975 and all Syphilis serology reports to the Special Treatment Clinic (V.D. Clinic) are now sent in this manner. This ensures rapid reporting of results, with appropriate attention to confidentiality.

Haemagglutination tests for Schistosomiasis were introduced in 1975.

Anti-tissue antibody work was introduced to the Serology Laboratory in this year and some modification of procedures followed including the use of composite tissue blocks.

A further move towards automation in the laboratory occurred during this year with the adaptation, either totally or in part, of several methods to the use of a diluter. This has resulted in increased accuracy, time savings and decreased use of pipettes.

CYTOGENETICS UNIT

The figures already supplied indicate a marked increase (62 per cent) in this work. There were 666 new patients referred and of these 158 were prenatal cases. In this branch of the work there was 100 per cent increase.

Lecturing to various medical bodies, pre- and post graduate, and groups of High School students continued as in 1974.

A Cytogenetics Conference in Adelaide in August was attended by two members of the staff, both of whom presented papers.

There were three publications during the year:—

"A Computerised Chromosome Registry" by M. T. Mulcahy in the Australian Journal of Mental Retardation.

"The 9p Trisomy Syndrome: Two further cases arising from different familial translocations" by M. T. Mulcahy and Joy Jenkyn in Clinical Genetics; and

"Pentasomy X" by M. T. Mulcahy in the Lancet.

As a result of these publications, requests have been made to contribute clinical material to:—

(i) Two forthcoming books, namely, "Atlas of Chromosome Diseases" and "New Chromosomal Syndromes"; and

(ii) A review Article.

(I) DIVISION OF CLINICAL PHOTOGRAPHY

This unit was incorporated in the State Health Laboratories in July, 1975, and continued to provide a service in clinical photography and associated work in the medical field for the following hospitals, and other Government organisations as listed—

Fremantle Hospital
Princess Margaret Hospital
Sir Charles Gairdner Hospital
King Edward Memorial Hospital
Repatriation General Hospital
Royal Perth Hospital
Perth Dental Hospital
Other Hospitals
University
State Health Laboratories
Public Health Department
- T. B. Control
- Child Health Services
- Dental Health Services
- State X-Ray Laboratory

Mental Health Services
Health Education Council
Institute of Radiotherapy
Private Practitioners
Miscellaneous

Work output increased and this was facilitated by greatly improved working conditions in the Perth Medical Centre. A total of 17 265 transparencies, 4 624 photographic prints and 254 pieces of art work were produced.

The Eye Clinic in Sir Charles Gairdner Hospital kept one photographer fully occupied and 175 patients were screened by Fluorescein Retinal Angiography involving 4 443 transparencies and 1 292 prints. It has been forecast that this number of patients will increase when the Eye Clinic moves into new accommodation in the Diagnostic Services building later this year. A room has been provided for the photography of specialised Eye Clinic patients.

TABLE IA

STATE HEALTH CENTRAL LABORATORIES—SPECIMENS ANALYSED AND AUTOPSIES PERFORMED

	1975	1974	Increase
			%
Clinical Bacteriology	11 950	6 572	81·8
Virology	34 028	29 312	16·1
Mycology	21 427	12 600	70·1
Mycobacteria	10 878	9 907	9·8
Venereal Disease	17 145	14 240	20·4
Enteric	18 137	15 330	18·3
Foods	3 483	2 081	67·4
Waters and Sewage	14 202	13 858	2·5
Total Microbiology	131 250	103 900	26·3
Biochemistry	71 534	55 717	28·4
Toxicology	5 841	3 692	58·2
Radioisotopes	21 742	13 223	64·4
Haematology	61 696	38 655	59·6
Serology	54 990	42 998	27·9
Histopathology	9 932	7 327	35·6
Cytology	13 084	9 617	36·1
Autopsies	1 241	1 293	....
Totals	371 310	276 422	34·3

TABLE IB

STATE HEALTH BRANCH LABORATORIES WORK DONE 1975—SPECIMENS ANALYSED

Branch	Total 1975	Total 1974	Increase 1975
			%
Albany	8 457	8 293	2·0
Broome	3 121	3 385	....
Bunbury/Collie	15 471	14 272	8·4
Busselton/Margaret River	6 200	6 765	....
Carnarvon	8 897	9 244	....
Derby	10 165	8 743	16·3
Esperance	4 976	3 250	53·1
Geraldton	14 199	13 704	3·6
Manjimup	7 113	5 277	34·8
Merredin	5 616	5 985	....
Narrogin	11 313	10 598	6·7
Northam	8 374	7 285	14·9
Pinjarra	6 017	4 786	25·7
Port Hedland	13 246	10 839	22·2
Wyndham/Kununurra	5 322	6 201	....
Roebourne	....	1 757	Closed June 1974
Dampier	6 796	2 498	Opened July 1974
Armadale/Kelmscott	1 100	....	Opened Aug. 1975
Bentley	2 140	....	Opened Aug. 1975
Mount Hospital	1 220	....	Opened Aug. 1975
Osborne Park	2 554	....	Opened Aug. 1975
Swan/Kalamunda	4 087	....	Opened Aug. 1975
	146 384	122 882	19·1

TABLE IIA

CLINICAL BACTERIOLOGY SPECIMENS 1975

	Country and Metropolitan Medical Practitioners	Mental Health Services	Department of Corrections	Family Planning Association	Aboriginal Medical Services	Total
No. of Specimens	6 956	738	962	2 887	407	11 950

V.D. CLINIC

	Total	No. Positive	% Positive
Specimens for Gonorrhoea	16 942	1 498	8·8
Specimens for Syphilis (Dark Ground Illumination)	203	23	11·3

TABLE IIB

WATERS AND SEWERAGE—SPECIMENS 1975

Specimens	State	Common-wealth	Local Health Authority	M.W.S.S.D.	Other	Total
Drinking Water	108	842	1 174	6 886	147	9 157
Natural Waters	1 739	....	1 013	1 194	53	3 999
Sewage/Effluents	50	37	130	629	15	861
Swimming Pools	51	....	125	....	9	185
Totals	1 948	879	2 442	8 709	224	14 202

FOODS—SPECIMENS 1975

	State	Common-wealth	Local Health Authority	Total	No. Positive for Pathogens	% Positive
Specimens	219	1 751	1 513	3 483	381	10·9

TABLE IIC

ENTERIC DISEASES LABORATORY—BACTERIOLOGY—SPECIMENS 1975

Specimens	State	Common-wealth	Local Health Authority	M.W.S.S.D.	Other	Total	No. Positive for Pathogens	% Positive
Human	10 737	214	198	....	440	11 589	1 471	12·7
Animal	2 220	....	44	....	7	2 271	893	39·3
Water/Effluent	1 354	164	936	....	105	3 054	1 540	50·4
Cultures Referred	592	44	....	495	89	725	725	....
Phage Typing	498	....	....	....	....	498	498	
Total	15 401	422	1 178	495	641	18 137	5 127	....

TABLE IID

PARASITOLOGY—SPECIMENS 1975

No of Specimens	No. Positive	% Positive
11 589	2 660	23·0

TALBE IIE

TUBERCULOSIS—SPECIMENS 1975

	Perth Medical Centre	Chest Clinic	Repatriation and Kalgoorlie	Others	Total	Total Positive	% Positive
						M. tuber-culosis .... 493 Other myco-bacteria 624	
No of Specimens	3 633	1 581	2 167	3 497	10 878	Total 1 117	10·3

TABLE IIF

MYCOLOGY—SPECIMENS 1975

Total Specimens	Positive	% Positive
21 427 Skin Scrapings 5 467	4 233 Referred 1 710	19·8 Collected by staff 3 757

TABLE IIG

VIRUS LABORATORY—SPECIMENS 1975

Specimens for Isolation	Positive Isolations	Specimens for Rubella	Specimens General Serology	Positive Serology	Total Specimens
8 767	1 726 (19·7%)	20 077	5 184	550 (10·6%)	34 028

TABLE III

CLINICAL BIOCHEMISTRY—SPECIMENS EXAMINED 1975

	1975	1974	1975 Increase
			%
Sir Charles Gairdner Hospital	46 242	41 112	12·5
State Health Laboratory Services	19 855	13 718	44·7
Commonwealth Instrumentalities	828	633	30·8
Surveys etc.	4 609	254	17·0
	71 534	55 717	28·4

TABLE IV

TOXICOLOGY SECTION—SPECIMENS 1975

	1975	1974	1975 Increase
			%
CLINICAL—			
Drugs	4 331	1 305	231·9
Alcohols	95	66	43·9
Pesticides	171	228	....
Miscellaneous	19	67	....
FORENSIC—			
Drugs	321	175	83·4
Alcohol	525	441	19·0
PUBLIC HEALTH—			
Mercury	337	171	97·1
Miscellaneous	42	169	....
Waters	....	1 070	....
	5 841	3 692	58·2

TABLE V

HAEMATOLOGY STATISTICS—SAMPLES ANALYSED

	1975	1974	1975 Increase
			%
Sir Charles Gairdner Hospital	38 558	5 989	....
State Health Laboratories	14 829	20 396	....
Commonwealth etc. and University	1 119	1 810	....
State Surveys	7 190	10 460	....
Total	61 696	38 655	59·6

NOTES: 1. 1974 only work done in State Laboratories. 1975 included work done in Combined Unit.
2. Percentage increase or decrease not therefore given.

66792/11/77—(3)

SEASONAL DISTRIBUTION OF VIRUS AND VIRUS-LIKE INFECTIONS DIAGNOSED IN VIRUS LABORATORY 1975.

TABLE VI

RADIO ISOTOPE SECTION—SPECIMENS RECEIVED 1975

	1975 total	1974 total	1975 increase
			%
Thyroid function	7 973	7 140	11·7
Vitamin B_{12} Folic acid	3 404	2 432	40·0
Insulins	2 748	757	263·0
Digoxins	1 789	403	343·9
Hormones—Miscellaneous	1 152	518	122·4
Estriols—			
Human Chorionic Sommatomammotrophin	1 262	875	44·2
Anti DNA	292	....	....
Australia Antigens and Antibodies	3 122	1 098	184·3
Total	21 742	13 223	64·4

TABLE VIIA

HISTOPATHOLOGY AND MORBID ANATOMY—WORK DONE 1975

	1975 total	1974 total	1975 increase
			%
Autopsies—Forensic	1 241	1 293	....
Surgical Biopsies	9 932	7 326	35·6
Blocks Cut—Autopsies	24 464	25 041	....
Blocks Cut—Biopsies	21 897	14 044	55·9
Frozen Sections—Biopsies	163	108	50·9
Immunological Sections	2 363	720	228·2

TABLE VIIB

CYTOLOGY—SPECIMENS ANALYSED

	1975	1974	1975 increase
			%
Lung cases	528	966	....
Cervical cases	12 448	8 437	47·5
Miscellaneous	108	214	....
Total cases	13 084	9 617	36·1
Total Slides	32 008	23 538	36·0
Slides per case	2·45	2·45	....

TABLE VIII

SEROLOGY DEPARTMENT—SPECIMENS RECEIVED 1975

	1975 total	1974 total	1975 increase
			%
Treponemal Serology	40 126	30 098	33·3
Bacterial Serology	4 902	4 594	6·7
Viral Ricketsial, Helminthic and Protozoal Serology	5 708	5 333	7·0
Hormone Miscellaneous	788	488	61·5
Medico-Legal	1 860	1 630	14·1
Chromosome Studies	786	485	62·1
Tissue Antibodies	503	....	....
Others	317	370	....
Total	54 990	42 998	27·9

Appendix II

Tuberculosis Control Branch

R.M. Porter, M.B.B.S, F.C.C.P.,
Director

Notifications

134 persons were diagnosed as having mycobacterial disease during 1975 in Western Australia (excluding those due to leprosy). This is a rate of 11·9 per 100 000. The rate for males was 15·5 and for females 8·2 per 100 000. New cases showed an overall rate of 10·8 per 100 000, males 14·1 and females 7·3. These were slightly below the 1974 figures. The incidence of new pulmonary disease (excluding atypical cases) showed an overall incidence of 6·9 per 100 000, the male rate 9·1 and the female 4·5. These figures are also below those for 1974 except for a slight increase in the female rate. The figures again show the importance of older males as a source of cases of pulmonary tuberculosis. It is of interest that apart from 3 girls with primary lesions, no persons under the age of 20 were notified with pulmonary disease.

Non-Pulmonary Tuberculosis

The rate of non-pulmonary disease shows a reversal in the sex ratio compared with that in the last 5 or 6 years there being a slightly higher rate, 3·3 per 100 000 in the males compared with 2·7 per 100 000 in the females and an overall incidence of 3·0 which is similar to that of 1974.

The total number of cases are the same as those for last year. As in 1974 more of the glandular cases were females and apart from one case of tuberculosis tenosynovitis all the atypical cases were in the glandular group. There were 11 genito urinary cases and all but one of these were born outside Australia.

The number of cases of bone and joint tuberculosis which had fallen to two in 1974 rose again to five cases in 1975.

Source of Cases

Chest Clinics were responsible for 27 per cent of the cases detected which is similar to 1974. Private medical practitioners were responsible for diagnosing 29 per cent and almost half of these were non-pulmonary cases. There was a fall in the number of cases diagnosed in General Hospitals, 16 per cent of the total as compared with 23 per cent in 1974 but a few more cases were diagnosed by Chest Hospitals and Repatriation Hospitals, 22 per cent compared with 16 per cent in 1974.

The figures show that although the Chest Clinics were responsible for diagnosing over a third of the cases of pulmonary disease, all the non-pulmonary cases were diagnosed either by private medical practitioners or hospitals. This shows the vital place that members of the medical profession have in the detection of tuberculosis, whether working in private practice or in hospitals. The problem may perhaps be highlighted by indicating that although the number of cases of tuberculosis in Western Australia have not yet dropped below 130 in any one year, with this number, any individual practising doctor in Western Australia could easily be in the position of not having seen a case of tuberculosis for 8–10 years. This makes it difficult for him to have in mind the fact that the patient who enters his surgery with sypmtoms of tiredness, loss of weight or a cough, may have active tuberculosis and require a chest x-ray or other investigations to confirm this.

Persons Born Outside Australia

There was a smaller percentage of persons notified who were born outside Australia than in 1974, 70 (52 per cent) as compared with 78 (55·7 per cent). Nineteen (19) patients were born in the United Kindgom, 7 in Yugoslavia, 7 in Burma and the remainder originated from 20 other countries. Seventeen (17) were diagnosed within twelve months of arrival in the manner set out below:—

Under treatment on Arrival	2
Routine x-rays on Arrival	5

Arrived with Undertaking	4
X-ray for Extension of Visa	1
Referred by General Practitioners	3
Referred from Public Hospitals	2

Among the refugees from Timor, made up of about 300 men, women and children, 4 active cases of tuberculosis were detected as well as 5 previously treated cases and a number with other pulmonary abnormalities.

Reactivations

There were 13 reactivations which is a greater number than any year since 1969 and 9·4 per cent of the total notifications.

Of these—

4 patients—No previous chemotherapy.
3 patients—Four months treatment or less.
2 patients—Resistant to Streptomycin, P.A.S. and Isoniazid.
1 patient —Resistant to P.S.S. and Isoniazid irregular short courses.
1 patient —Intermittent short courses sensitive organisms.
1 patient —Probably six months of effective treatment.
1 patient —Known irregular taker of treatment.

Four of the reactivations were Australian born and the other nine were born in other countries. Seven had their original treatment in Australia and six overseas.

This group emphasized the importance of the continuing check by Chest Clinics of previous cases of tuberculosis who have been inadequately treated in the past.

Atypical Disease

In 1975 there were 18 patients with new disease due to atypical mycobacteria compared with 19 in 1974.

Serotype		Number of Patients			
Earlier Designation	New Designation	Pulmonary	Wrist	Glands	Total
111b	11	1	....	....	1
Howell	12	....	....	2	2
Boone	14	3	1	....	4
Altmann	18	1	....	....	1
Arnold	20	1	....	....	1
? Davis b	21	....	....	1	1
10409	22	....	....	1	1
Scrofulaceum	41	....	....	1	1
Lunning	42	2	....	1	3
Non typeable	....	....	....	1	1
		8	1	7	16

There were also 2 patients with pulmonary disease caused by M. Kansasii.

Bed Occupancy and Domiciliary Treatment

With the advent of the hospital Medibank agreement on 1st August the Tuberculosis Control Programme was no longer responsible for the cost of hospitalisation of tuberculosis patients. Hospital costs had been contained in recent years by encouraging the early discharge of patients. This policy has thrown an increased responsibility on the visiting nurses from the Chest Clinic who supervise Out-Patient treatment. Unreliability may be suspected, either while the patient is still in hospital or as a result of checks carried out by the Chest Clinic nurses after discharge. Supervised drug therapy is then given either by the Community Health nurses, if in the country, or the Silver Chain nurses in the city. Although this is not always welcomed by the patient it can have considerable benefit for the patient as well as the community, both on the grounds of Public Health and saving of costs. However, there are some patients particularly from outlying areas who still need to remain in hospital for long periods to ensure reasonably adequate control of the disease. The length of this period is now able to be reduced because of recent research into the use of Rifampicin and Isoniazid showing a high rate of cure with less prolonged courses of therapy.

Drug Resistance

There were eighteen patients whose organisms showed resistance of one kind or another to anti-tuberculosis drugs. Fortunately all but four of these were resistant to only one drug and of the four, three were resistant to two drugs. For this reason treatment has been possible in all cases. None were shown to be resistant to Rifampicin. Only two of these eighteen resistant patients gave a history of having had previous treatment which suggests that satisfactory drug therapy is being given in Western Australia.

In all 83 patients produced mycobacterium tuberculosis. This is a 69 per cent positive rate for those classified as being due to mycobacterium tuberculosis. Of these 75 were new cases and 7 were reactivated cases with one a carry-over case from the previous year.

Special Surveys

A survey of men 45 years of age and over was continued as in the previous year and gave the following results—

12 786 were x-rayed and four cases of tuberculosis notified (0·3 per thousand).

There were 20 cases of bronchial carcinoma (1·6 per thousand), as well as a number of other conditions.

Summary

There has been a very gradual reduction in the notification rate of tuberculosis in recent years. Without a continuing compulsory mass x-ray programme notification becomes a less accurate measure of the rate of tuberculosis because it is probable that not all asymptomatic cases are being diagnosed. As indicated earlier, the diagnosis of tuberculosis in Western Australia now depends very heavily on the clinical acumen of doctors backed up by chest clinics keeping under review those previously infected who have been treated poorly or not at all. Migrants continue to be an important source of cases, while checking of contacts continues to prove a rewarding activity.

Table 1.

TUBERCULOSIS—MAIN STATISTICAL FIGURES

Year	Mean Population 1 000s	Notifications (includes Transfers-in)				No. on Register (Pulm.) at 31st Dec.	No. on Register per 100 000 (Pulm.)	Number Receiving T.B. Allowance at 31st Dec.	Deaths			Death Rate per 100 000	
		Pulm. (incl. Pleural effus.)	Non-Pulm.	Total	Pulm. per 100 000				Pulm.	Non-Pulm.	Total	Pulm.	All Forms
1950	558	586	18	604	104·8	2 100	376	515	125	3	128	22·4	22·9
1951	580	467	37	504	80·4	2 402	413	474	76	6	82	13·1	14·1
1952	601	508	49	557	84·5	2 574	428	396	75	7	82	12·5	13·6
1953	621	378	34	412	60·6	2 762	445	361	43	3	46	6·9	7·4
1954	640	348	34	382	54·3	2 769	432	326	57	4	61	8·9	9·5
1955	659	413	39	452	62·7	2 965	450	330	31	2	33	4·7	5·0
1956	677	424	44	468	62·6	2 900	428	264	43	3	46	6·3	6·8
1957	692	332	32	364	47·9	2 786	403	198	36	1	37	5·2	5·3
1958	706	355	24	379	50·3	2 726	386	213	22	4	26	3·1	3·4
1959	726	320	34	354	44·1	2 684	369	182	24	....	24	3·3	3·3
1960	731	296	34	330	40·5	2 388	327	148	29	1	30	4·0	4·1
1961	737	209	41	250	28·4	1 349	183	89	18	1	19	2·4	2·6
1962	755	243	25	268	32·2	1 333	177	90	24	4	28	3·2	3·7
1963	773	216	28	244	27·9	1 218	158	92	13	....	13	1·7	1·7
1964	790	176	32	208	22·3	1 221	154	88	20	....	20	2·5	2·5
1965	806	153	25	178	19·0	919	114	65	12	....	12	1·5	1·5
1966	836	134	36	170	16·0	840	100	64	16	....	16	1·9	1·9
1967	877	137	34	171	15·6	814	93	54	9	....	9	1·0	1·0
1968	910	145	37	182	15·9	680	75	44	8	1	9	0·9	1·0
1969	947	133	27	160	14·0	659	70	43	8	....	8	0·8	0·8
1970	983	113	35	148	11·5	653	67	32	10	....	10	1·0	1·0
1971	1 029	113	30	143	11·0	625	61	27	17	2	19	1·6	1·8
1972	1 053	125	30	155	11·9	569	54	40	8	....	8	0·8	0·8
1973	1 068	110	36	146	10·3	522	49	15	11	....	11	1·0	1·0
1974	1 090	104	36	140	9·5	480	44	17	8	1	9	0·7	0·8
1975	1 127	102	36	138	9·1	460	41	29	10	2	12	0·9	1·1

Table 2

ANNUAL NOTIFICATIONS OF PULMONARY TUBERCULOSIS SHOWING STAGE OF DISEASE*

Year	Parenchymal Disease						Pleural Effusion		Total
	Minimal		Moderately Advanced		Advanced				
		%		%		%		%	
1952	122	24·0	275	54·1	101	19·9	10	2·0	508
1953	98	25·9	210	55·5	65	17·2	5	1·4	378
1954	96	27·6	178	51·1	74	21·3	....	....	348
1955	111	26·9	225	54·5	64	15·5	13	3·1	413
1956	127	38·0	217	51·1	72	17·0	8	1·9	424
1957	102	30·7	163	49·1	61	18·4	6	1·8	332
1958	91	25·6	187	52·7	72	20·3	5	1·4	355
1959	103	32·2	151	47·2	55	17·2	11	3·4	320
1960	89	30·1	144	48·6	49	16·6	14	4·7	296
1961	90	43·1	73	34·9	34	16·3	12	5·7	209
1962	117	48·1	84	34·6	36	14·8	6	2·5	243
1963	99	45·8	89	41·2	26	12·0	2	1·0	216
1964	71	40·3	81	46·0	23	13·1	1	0·6	176
1965	75	49·0	60	39·2	17	11·1	1	0·7	153
1966	59	44·0	54	40·3	18	13·4	3	2·2	134
1967	56	40·9	59	43·1	20	14·6	2	1·4	137
1968	71	48·9	59	40·7	11	7·6	4	2·8	145
1969	57	42·9	62	46·6	13	9·8	1	0·7	133
1970	51	45·1	47	41·6	10	8·9	5	4·4	113
1971	42	37·2	52	46·0	17	15·0	2	1·8	113
1972	51	40·8	50	40·0	20	16·0	4	3·2	125
1973	45	40·9	46	41·8	14	12·7	5	4·6	110
1974	36	34·6	48	46·2	13	12·5	7	6·7	104
1975	43	42·2	43	42·2	15	14·7	1	0·9	102

* Classified according to Diagnostic Standards N.T.A.

Table 3

TUBERCULOSIS NOTIFICATIONS FOR YEAR ENDED 31st DECEMBER, 1975
SHOWING AGE, SEX, FORM AND STAGE OF DISEASE

Age Group	Males					Females					Persons					Total
	Pulmonary			Non Pulm.	Pleur. Effus.	Pulmonary			Non Pulm.	Pleur. Effus.	Pulmonary			Non Pulm.	Pleur. Effus.	
	Min.	Mod. Adv.	Adv.			Min.	Mod. Adv.	Adv.			Min.	Mod. Adv.	Adv.			
0–4	....	....	....	2	....	2*	....	....	4	....	2*	....	....	6	....	8
5–9	....	....	....	2	....	1*	....	....	1	....	1*	....	....	3	....	4
10–14	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
15–19	....	....	....	....	....	....	....	....	2	....	....	....	....	2	....	2
20–24	2	1	1	3	....	4	2	....	1	....	6	3	1	4	....	14
25–29	1	1	2	1	....	....	1	....	1	....	1	2	2	2	....	7
30–34	2	....	....	1	....	1	....	1	....	....	3	....	1	1	....	5
35–39	3	2	1	1	....	....	1	....	1	....	3	3	1	2	....	9
40–44	1	1	1	2	....	2	1	1	....	....	3	2	2	2	....	9
45–49	4	4	2	1	....	3	1	....	....	....	7	5	2	1	....	15
50–54	5	3	....	2	....	....	1	2	3†	....	5	4	2	5†	....	16†
55–59	2	4	1	1	....	....	2	1	1	....	2	6	2	2	....	12
60–64	2	6	....	2	....	1	....	....	....	....	3	6	....	2	....	11
65–69	2	5	....	3	....	....	1	....	....	....	2	6	....	3	....	11
70–74	....	3	....	....	....	1	1	1	....	....	1	4	1	...	....	6
75 and over	3	2	1	....	1	....	....	....	1	....	3	2	1	1	1	8
N/S	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1
Total	28	32	9	21	1	15	11	6	15	....	43	43	15	36	1	138

* Primary
† Includes 1 Bovine

Table 4

SITE AND TYPE OF DISEASE (excludes transfers-in)

Pulmonary				Extrapulmonary			
Diagnosis	No.	% of Pulmonary Cases	% of All Cases	Diagnosis	No.	% of Extra-pulmonary Cases	% of All Cases
Primary	3	3·1	2·2	Genito-urinary	11	30·6	8·2
Pleural effusion	1	1·0	0·8	Lymph glands	15	41·7	11·2
Post-Primary—				Bone and Joint	5	13·9	3·7
1. Minimal	39	39·8	29·1	Meninges	1	2·8	0·7
2. Mod. Advanced	41	41·8	30·6	Skin	1	2·8	0·7
3. Advanced	14	14·3	10·5	Empyema	3	8·3	2·2
Total	98	100	73·1	Total	36	100	26·9

Table 5

REACTIVATIONS

Previous Treatment	Number of Reactivations												Total
	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	
(1) No chemotherapy	8	6	5	4	4	7	2	6	4	3	3	4	56
(2) Inadequate chemo-therapy—													
Without Surgery	13	5	13	5	4	11	6	5	3	4	3	7	79
With Surgery	5	2	1	4	1	....	....	....	....	....	1	1	15
(3) Apparently adequate chemotherapy....	....	2	....	....	....	2	3	1	1	....	1	1	11
Total	26	15	19	13	9	20	11	12	8	7	8	13	161

Table 6

REACTIVATION RATES

Year	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
No. of reactivations	26	15	19	13	9	20	11	12	8	7	8	13
As % of total cases	12·5	8·4	11·2	7·6	4·9	12·5	7·4	8·4	5·2	4·8	5·7	9·4
Per 100 000 population	3·3	1·2	2·3	1·5	1·0	2·1	1·1	1·2	0·8	0·7	0·7	1·2

Table 7

ANALYSIS OF REGISTER AS AT 31st DECEMBER, 1975

A. Pulmonary Tuberculosis
(excluding Pleural Effusions)

Activity	Number on Register According to Original Extent of Lesions			Total
	Minimal	Moderate	Advanced	
Active	44	57	15	116
Inactive:				
0–1 years	10	25	4	39
1–2 years	28	29	7	64
2–3 years	34	46	9	89
3–4 years	39	41	9	89
4–5 years	24	22	5	51
5+ years	....	....	....	....
Total	179	220	49	448

B. Pleural Effusion	12
C. Non-Pulmonary Tuberculosis	110
Total All Forms	570

Table 8

WESTERN AUSTRALIA: TUBERCULOSIS INCIDENCE BY COUNTRY OF BIRTH, 1967–1975: MALES

Country of Birth	Population at June 30, 1971 Thousands (Census)	Incidence Per Thousand Persons									Total Notifications 1967–75
		1967	1968	1969	1970	1971	1972	1973	1974	1975	
U.K. and Republic of Ireland	82·2	0·53	0·36	0·33	0·51	0·31	0·23	0·21	0·29	0·12	182
Germany	3·6	....	0·34	0·34	0·34	0·69	0·56	0·56	....	0·28	10
Greece	2·7	0·65	0·32	0·32	0·32	....	1·11	0·74	0·74	....	12
Italy	17·1	0·50	0·25	0·44	0·37	0·44	0·41	0·29	0·41	0·12	53
Netherlands	6·2	0·17	0·17	....	....	0·17	0·16	....	0·16	0·16	7
Poland	2·8	1·43	1·78	0·71	....	0·36	1·07	0·36	....	0·36	17
Yugoslavia	6·2	0·43	0·87	2·00	0·65	0·43	0·16	0·16	1·29	0·81	35
Other European	8·6	1·08	0·77	1·23	0·92	....	0·05	0·93	0·23	0·23	39
Other Birthplaces	23·8	0·68	1·52	0·51	1·27	0·93	0·67	0·50	0·55	0·92	121
Total non-Australian born	153·2	0·56	0·54	0·49	0·55	0·38	0·48	0·31	0·37	0·29	476
Australian born	375·9	0·20	0·19	0·15	0·12	0·12	0·22	0·12	0·10	0·13	432

Table 9

WESTERN AUSTRALIA: TUBERCULOSIS INCIDENCE BY COUNTRY OF BIRTH, 1967–1975: FEMALES

Country of Birth	Population at June 30, 1971 Thousands (Census)	Incidence per Thousand Persons									Total Notifications 1967–75
		1967	1968	1969	1970	1971	1972	1973	1974	1975	
U.K. and Republic of Ireland	74·8	0·18	0·18	0·12	0·14	0·20	0·16	0·09	0·12	0·12	78
Germany	3·5	....	....	....	0·33	0·33	....	....	....	0·86	5
Greece	2·3	0·43	....	0·43	....	....	0·43	0·87	0·43	0·87	8
Italy	13·4	0·08	0·08	0·33	0·08	0·41	0·15	0·15	....	....	16
Netherlands	5·0	....	....	....	....	0·22	....	....	0·20	....	2
Poland	2·0	....	1·00	2·00	....	1·00	0·50	1·00	0·50	....	12
Yugoslavia	3·9	0·34	....	....	....	0·34	0·51	0·51	0·26	0·51	9
Other European	5·9	0·68	0·45	0·68	0·45	....	0·68	0·34	....	0·71	17
Other Birthplaces	19·3	0·20	0·82	0·51	0·61	1·33	0·47	0·36	0·41	0·47	67
Total non-Australian born	130·1	0·19	0·24	0·25	0·19	0·37	0·21	0·18	0·16	0·20	214
Australian born	371·3	0·08	0·12	0·11	0·11	0·09	0·11	0·08	0·07	0·06	254

Table 10

PATIENTS FROM WHOM MYCOBACTERIA WERE ISOLATED (FOR THE FIRST TIME) IN 1975 (OTHER THAN M. TB)

Type	Casual Isolation	Persistent Isolations			Total
		Mycobacteriosis			
		Pulm.	Non-Pulm.	Total	
M. Kansasii	2	2	....	2	4
Scotochromogens	1	....	1	1	2
M. intracellulare	65	7	7	14	79
Rapid Growers	17	....	....	....	17
Mixed	4	....	....	....	4
Total Patients	89	9	8	17	106

Table 11

MYCOBACTERIAL DISEASE OF LYMPH NODES IN CHILDREN

Year	Scoto-chromogenic mycobacteria Identified	M. intra-cellulare Identified	M. TB (Human) Identified	Cultures Negative	Total Cases
1961	....	1	....	1	2
1962	3	2	....	2	7
1963	....	3	....	8	11
1964	....	3	1	4	8
1965	....	1	....	5	6
1966	2	6	....	7	15
1967	1	3	....	9	13
1968	2	9	....	5	16
1969	1	5	....	5	11
1970	3	2	....	5	10
1971	....	3	....	3	6
1972	3	7	....	5	15
1973	6	8	....	1	15
1974	2	5	....	5	12
1975	....	5	....	3	8
Total number of children	23	63	1	68	155

Table 12

PATIENTS NOTIFIED WITH ATYPICAL TUBERCULOSIS
(including reactivations)

Year	M. kansasii		Scotochromogens				M. Intracellulare				Rapid Growers	
	Pulm.	Other	Pulm.	Lymph Nodes	Other	Total	Pulm.	Lymph Nodes	Other	Total	Pulm.	Lymph Nodes
1955	....	....	....	....	....	....	1	....	....	1	....	....
1956	....	....	....	....	....	....	1	....	....	1	....	....
1957	....	....	....	....	....	....	1	....	....	1	....	....
1958	....	....	....	....	....	....	4	1	....	5	....	....
1959	....	....	....	....	....	....	10	2	....	12	....	....
1960	....	....	1	....	....	1	11	1	....	12	1	....
1961	....	....	2	....	....	2	11	1	....	12	....	....
1962	....	....	1	3	....	4	8	2	....	10	....	....
1963	....	....	3	....	....	3	17	3	....	20	....	....
1964	....	....	5	....	....	5	14	3	....	17	....	....
1965	2	....	2	....	....	2	13	1	....	14	....	....
1966	2	....	3	2	....	5	7	6	....	13	....	....
1967	1	....	4	1	....	5	6	3	....	9	....	....
1968	....	....	5	2	1	8	5	9	....	14	....	....
1969	1	....	....	1	....	1	10	5	....	15	....	....
1970	3	....	2	3	....	5	11	3	....	14	....	....
1971	....	....	1	....	....	1	5	3	....	8	....	....
1972	2	....	1	3	....	4	12	7	1	20	1	....
1973	....	1	....	6	....	6	8	8	....	16	....	1
1974	2	....	....	2	....	2	9	5	....	14	....	....
1975	2	....	....	1	....	1	8	6	1	15	....	....
Total	15	1	30	24	1	55	172	69	2	243	2	1

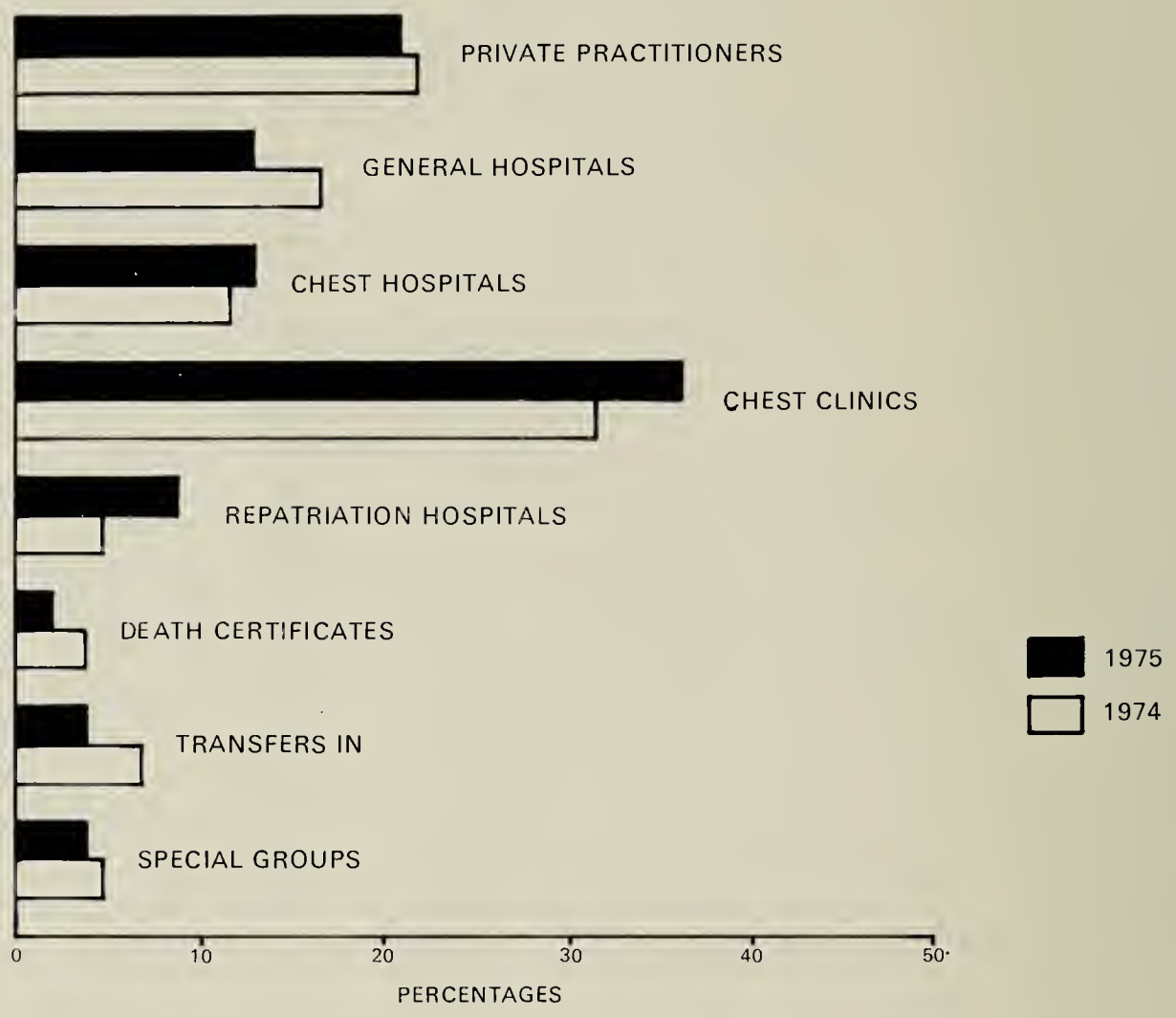
Plus: Two patients with mixed pulmonary disease, in 1963 and 1970.

Appendix

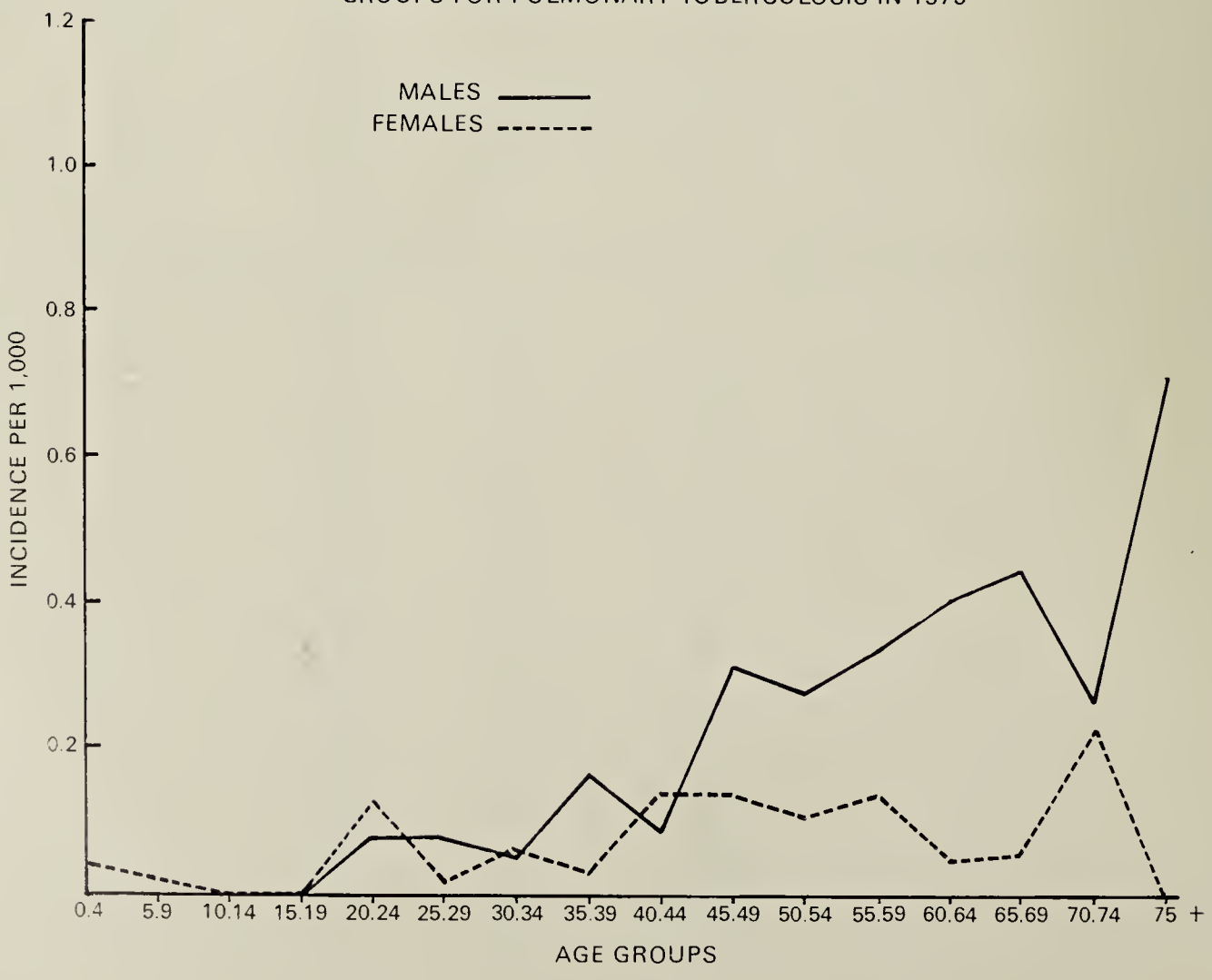
PULMONARY TUBERCULOSIS
Western Australia

Year	Population in 1 000s	Notifications Received	Incidence Rate per 100 000 Population	Deaths Registered	Mortality Rate per 100 000 Population
1911	287	259	90·2	190	66·2
1912	301	429	142·5	220	73·1
1913	313	424	135·5	206	65·8
1914	323	353	109·3	229	70·9
1915	321	336	104·7	233	72·6
1916	313	511	163·5	225	71·9
1917	306	464	151·6	217	70·9
1918	308	432	140·5	245	79·5
1919	320	467	145·9	289	91·6
1920	330	442	139·9	259	78·4
1921	334	424	126·9	277	82·9
1922	341	387	113·8	256	75·1
1923	351	361	102·8	216	61·5
1924	363	381	104·6	228	62·8
1925	373	403	108·4	259	69·4
1926	381	415	108·2	252	66·1
1927	392	409	104·3	231	56·4
1928	408	395	96·8	282	69·1
1929	421	400	95·0	245	53·4
1930	429	569	132·6	218	50·8
1931	432	372	86·1	223	51·6
1932	435	339	77·9	203	46·7
1933	439	295	67·2	207	47·2
1934	442	287	64·9	218	49·3
1935	447	270	60·4	210	47·0
1936	452	338	74·8	193	42·7
1937	457	239	53·0	172	37·6
1938	464	247	53·2	177	38·1
1939	470	202	43·0	179	38·1
1940	473	231	48·8	181	38·3
1941	474	154	32·5	185	39·0
1942	477	113	23·7	175	36·7
1943	477	273	57·3	144	30·2
1944	481	219	45·4	134	27·9
1945	488	271	55·5	149	30·5
1946	493	343	69·6	163	33·1
1947	502	372	74·0	128	25·4
1948	515	325	63·1	157	30·5
1949	533	499	93·6	123	23·1
1950	558	586	104·8	129	23·1
DEATH CLASSIFICATIONS ACCORDING TO 6TH (1948) INTERNATIONAL LIST					
1950	558	586	104·8	125	22·4
1951	580	467	80·4	76	13·1
1952	601	508	84·5	75	12·5
1953	621	378	60·6	43	6·9
1954	640	348	54·3	57	8·9
1955	659	413	62·7	31	4·7
1956	677	424	62·6	43	6·3
1957	692	332	47·9	36	5·2
1958	706	355	50·3	22	3·1
1959	726	320	44·1	24	3·3
1960	731	296	40·5	29	4·0
1961	737	209	28·4	18	2·4
1962	755	243	32·2	24	3·2
1963	773	216	27·9	13	1·7
1964	790	176	22·3	20	2·5
1965	806	153	19·0	12	1·5
1966	836	134	16·0	16	1·9
1967	877	137	15·6	9	1·0
1968	910	145	15·9	8	0·9
1969	947	133	14·0	8	0·8
1970	983	113	11·5	10	1·0
1971	1 029	113	11·0	17	1·6
1972	1 053	125	11·9	8	0·8
1973	1 068	110	10·3	11	1·0
1974	1 090	104	9·5	8	0·7
1975	1 127	102	9·1	10	0·9

GRAPH SHOWING THE SOURCE OF NOTIFICATION OF CASES OF PULMONARY TUBERCULOSIS AS A PERCENTAGE OF TOTAL NOTIFICATIONS



GRAPH SHOWING THE INCIDENCE PER 1,000 IN AGE GROUPS FOR PULMONARY TUBERCULOSIS IN 1975



Appendix III

Epidemiology and Special Services

R. Allen M.B., B.S.,
Medical Officer in Charge

Notifiable Diseases

Infectious disease notifications during 1975 showed little variation from 1974 figures, the only difference of note being an increase in the number of cases of the icteric form of infective hepatitis from 68 to 108.

Malaria

Twenty four cases of malaria occurring in Western Australia during the year were investigated. All cases originated from overseas countries:—

Portuguese Timor	9	(including 5 refugees)
Papua-New Guinea	6	
Indonesia	5	
New Hebridies	2	
Malaysia	1	
Vietnam	1	

Arrangements have been made for information to be received from laboratories when blood-slides are found to reveal the presence of malaria parasites. This reduces the likelihood of cases occurring in this State and not being officially notified, thus avoiding investigation.

Immunisation

A shortage of professional staff during the year has caused considerable difficulty in maintaining normal immunisation services, especially in country areas, and on more than one occasion the withdrawal of a country mobile immunisation clinic has appeared to be unavoidable. These crises have only been overcome by increasing the workload on available staff—and this at a time when a restructure of clerical staffing has resulted in the Branch being without a clerical officer.

Immunisations carried out during 1975

			Increase or decrease over 1974 %
Poliomyelitis			
Sabin Vaccine		66 574	+ 0·09
Injections			
Triple Antigen	16 956	....	+ 2·9
Combined diptheria and tetanus	7 725	....	— 2·8
Tetanus toxoid	4 758	....	+ 3·4
Measles vaccine	6 453	....	+26·4
Rubella vaccine	9 507	....	+ 3·8
Miscellaneous	385	....	—11·3
Total injections		45 784	+ 4·7
Grand Total		112 358	+ 1·9

Appendix IV

Venereal Disease Control Branch

W.A. Newnham, M.B., B.S.,
Venereologist in Charge

The Public Health Department's Venereal Disease Control Branch for the investigation, diagnosis and treatment of the sexually transmitted diseases, has continued its efforts for the year 1975. There has been continued co-operation with the Royal Perth Hospital, in which area the Clinic functions as an Out-Patients' Department. The liaison with the Serological and Virological Departments of the State Health Laboratory Service, has remained at a high standard, as has the liaison with Community Health Services. Their co-operation is appreciated.

The Venereologist-in-Charge spent three months in England on a Public Health Travelling Fellowship and successfully completed the British Postgraduate Medical Federation's course in Sexually Transmitted Diseases. A great deal of valuable experience was gained working in Clinics in London and visiting establishments throughout England and Scotland. He attended a meeting of the Anglo-American Society for the Sexually Transmitted Diseases, which was held at the Royal Society of Medicine in London. The conference extended over a period of five days and all aspects of the subject were discussed. It can be stated as a result of observations made that diagnosis, investigation, treatment and research in Western Australia, are comparable with overseas procedures, but contact tracing and health education programmes need upgrading.

In January 1975, Dr. Morris Gollow joined the staff of the Venereal Disease Control Branch. He had previously been in general practice for approximately twenty years. He has applied himself with energy to the various facets of work in the Clinic, and proved himself to be a very able lecturer.

Attendances at the Clinic have continued to rise and are summarised in the following table.

Year	Total Attendances	New Male Patients	New Female Patients	Total New Patients	Proportion of Male to Female Patients
1972	10 786	1 615	597	2 212	2·7:1
1973	10 879	1 922	770	2 692	2·7:1
1974	15 119	2 698	1 089	3 787	2·5:1
1975	20 335	3 178	1 411	4 589	2·2:1

The 1975 figure represents an increase of 34·5 per cent over the total attendances in 1974. The number of new male and female patients increased by 17·79 per cent and 29·56 per cent respectively, and the male to female ratio decreased to 2·2:1. It is important that this ratio be further reduced in 1976.

The number of cases of Venereal Diseases notified to the Commissioner of Public Health in the years 1974 and 1975 is shown below, broken down into the four focal groups.

Year	Gonorrhoea	Syphilis	Granuloma	Chancroid	Total Venereal Disease
1974	2 032	436	1	6	2 475
1975	1 977	657	5	9	2 648

The 1975 total of 2 648 is an increase of 6·99 per cent over the 1974 total of 2 475.

The greatest number of notified cases in females was still in the 15–19 year age group, and in the males the 19–24 year age group. For the first time, the actual number of cases is shown in the under 15 year age group, in both boys and girls. The figures for all age groups are shown as follows.

Year 1975	0–14 Years	15–19 Years	20–24 Years	25–29 Years	30–34 Years	Over 35 Years	Age not Stated	Total
Females	31	296	270	145	77	124	7	950
Males	9	308	545	348	159	302	27	1 698

Relating these figures to percentages, the following facts emerge for both males and females, in the relative age groups, as shown below.

Year 1975	0–14 Years	15–19 Years	20–24 Years	25–29 Years	30–34 Years	Over 35 Years	Age not Stated
	1·51%	22·80%	30·77%	18·61%	8·91%	16·08%	1·28%

The fact that there has been a slight fall in the number of cases of Gonorrhoea is interesting, but several years will have to pass before any significance can be placed upon it.

Certainly the notification of 657 cases of Syphilis in 1975 is an alarming figure when compared with 436 in 1974—an increase representing 50·68 per cent. This may be due to a possible increase in incidence, but it is most likely attributed to the increased activity of the Clinic in Western Australia, and the fact that more doctors are now notifying their cases.

When the 15–19 and 19–24 percentage age groups are combined, a figure of 53·6 per cent is obtained, and when the 24–29 percentage age group is added, a figure of 72·2 per cent emerges. In other words, more than half the total percentage of the notified cases of venereal disease in this State occurs in the 15–25 year age group, and almost three-quarters in the 15–30 year age group. A fact often stated is that this group of diseases, which are relatively easy to diagnose, which can be treated with efficiency with modern antibiotics, and in which the incidence is still increasing, not only in this State but in most parts of the world, indicate that some factor is needed to aid Public Health Departments in their control. Research has been progressing mostly in the U.S.A., towards developing a vaccine or vaccines, and although initial reports show some encouragement, the final effective result is some years away.

A table has been included below, showing the number of cases in Western Australia since 1965.

Year	1966–1975 Gonorrhoea	Syphilis	Granuloma	Chancroid	Total Venereal Diseases
1966	690	20	....	....	710
1967	796	41	....	....	839
1968	718	60	1	....	779
1969	817	209	....	2	1 028
1970	1 166	159	3	....	1 328
1971	1 236	254	2	1	1 493
1972	1 467	258	2	1	1 728
1973	1 657	290	2	3	1 952
1974	2 032	436	1	6	2 475
1975	1 977	657	5	9	2 648

Western Australia has a higher notified incidence than all other States except the Northern Territory. Comparing the Australian average for 1971–1974 inclusive, per 100 000 head of population, with that of this State, the following facts emerge.

VENEREAL DISEASE

Incidence in Australia per 100 000 head of population

1971	....	....	91
1972	....	....	94
1973	....	....	97
1974	....	....	107
1975	....	....	(Not yet available from Commonwealth Bureau of Census and Statistics).

Incidence in Western Australia per 100 000 head of population

1971	....	....	144
1972	....	....	168
1973	....	....	181
1974	....	....	224
1975	....	....	236 (Based on official June 1975 population figure.)

Research has continued into Chlamydia, accepted as the causative organism in a large percentage of cases of non specific urethritis. It is sexually transmitted. Non specific urethritis is not a legally notifiable venereal disease. However, its incidence in the male Clinic patients is 3 per cent more than the combined percentage of Syphilis and Gonorrhoea. Laboratory work is also being continued into various aspects of the Herpes Simplex virus and the Cytomegal viruses.

As in previous years, the Community Health Services have been very ready to help on contact tracing and treatment in all areas of the State. It is due to Area Medical Officers and nurses of this Department, that as much progress has been possible, particularly in the more outlying regions.

I would like to acknowledge the assistance received from the Public Health Department, and particularly the staff of the Clinic.

Appendix V

Community Health Services

C. F. Quadros M.B.B.Ch., B.A.O., D.P.H.
Acting Director

1. INTRODUCTION

Over the past four years this Service has seen an expansion to effectively reach out to the remotest areas of this very large but sparsely populated State. This has meant an increase in staffing, accommodation and transportation. Difficulties in transportation to the remote areas have included terrain inaccessible by road, air strips often too wet for aircraft to land, and the utilisation of boats, particularly on the Fitzroy River, during flood times. Upgrading the radio network has been an important objective as sometimes this is the only means of communication between the more remote stations and here. New Centres were opened in as far away places as Oombulgurri in the Kimberley to Mt. Barker, Busselton, Mandurah and Southern Cross in the South West, and Nullagine in the Pilbara.

Transfer of some Nursing Outposts from the Medical Department to Community Health Services has continued; these include Lombadina, Balgo Mission Hospital and Beagle Bay. This has thrown a new dimension to the Service where total basic health care is now our mandate for these communities. Flying escort nursing service in Wyndham, Port Hedland and Perth in conjunction with the R.F.D.S. has also fallen on our shoulders during the year. Funding from the Hospitals and Health Services Commission has provided nursing staff to cater for the community at large in such areas as Mt. Barker, Busselton, Mandurah, Southern Cross in the South West Region and Hilton Park, Bayswater, North Perth in the Metropolitan Region.

In December 1975 in conjunction with the W.A. Arthritis and Rheumatoid Foundation, the first field nurse commenced work in the prevention and aftercare of this specialised problem, and in early 1976 two other nurses joined this team of three to operate as widely as Geraldton in the North, Esperance in the South East and Augusta in the South.

The year also saw the service cope with three disaster areas:—

the rehabilitation of the Darwin Cyclone Tracey victims; medical screening of the Timorese refugees and the Port Hedland cyclone—where our staff fell victims to the vagaries of Cyclone Joan. A full medical team comprising of medical officers, a Leprologist and nursing staff rendered health care for the 275 Timorese and helped with the integration of these unfortunate refugees to the Australian community. The appointment of a Timorese as a Field Assistant to the Service went a long way in the supportive care and his services now extend to a large number of Portuguese families in the Fremantle area.

The development of the Aborigines has continued through involvement of the communities in participating in health care delivery through community nominated camp nurses and field assistants. The appointment of field nurses as educators giving on the job training, has helped greatly to upgrade standards of health through basic hygiene and health education in these communities. The utilisation of "mabans" or traditional native doctors has done much to transcend cross-cultural boundaries.

66792/11/77—(4)

2. ADMINISTRATION

The organisation chart is shown below:—

PUBLIC HEALTH DEPARTMENT

MINISTER FOR HEALTH

COMMISSIONER OF PUBLIC HEALTH AND MEDICAL SERVICES

SECRETARY	DIRECTOR GENERAL OF PUBLIC HEALTH	PRINCIPAL DIRECTOR OF NURSING DIRECTOR OF COMMUNITY NURSING
ASSISTANT ADMINISTRATIVE OFFICER	DIRECTOR, COMMUNITY HEALTH SERVICES	NURSING SUPERVISOR COMMUNITY HEALTH SERVICES
	DEPUTY DIRECTOR	DEPUTY NURSING SUPERVISOR
Resource Personnel LEPROLOGIST ANTHROPOLOGIST NUTRITIONIST		ASSISTANT NURSING SUPERVISOR
REGIONAL OFFICERS	REGIONAL MEDICAL OFFICERS	REGIONAL NURSE SUPERVISOR
		PUBLIC HEALTH FIELD NURSES
	MEDICAL OFFICERS	FIELD NURSING AIDES
		FIELD ASSISTANTS
		CAMP NURSES

The State continues to be divided into six Community Health Regions:

1. Kimberley—East and West—Regional Headquarters, Derby.
2. Pilbara—Regional Headquarters, Port Hedland.
3. Northern—Regional Headquarters, Carnarvon.
4. Eastern Goldfields—Regional Headquarters, Kalgoorlie.
5. South West—North and South—Regional Headquarters, Mt. Hawthorn, Perth.
6. Metropolitan—North and South—Regional Headquarters, Mt. Hawthorn, Perth.

The staff organisation as set up by the Public Service Board in June 1974 actually became a reality in 1975 and with the new staff in their positions aided by the few experienced officers, the administration process became viable.

To further implement regional responsibility, Regional Officers with administrative and clerical duties took office. This has removed considerable strain on the nursing and medical staff, allowing them greater time to concentrate on the task of providing health care. Consultation with the regional team has ensured that the needs of all communities are met. Targets and Aims are reviewed and updated annually by the Regional Medical Officers and Regional Nurse Supervisors. Conferences were held quarterly.

Developing good rapport with the client group is essential for effective realisation of our Targets and Aims, but unfortunately problems arise with retaining the services of professional staff because of the remote areas, difficult climatic conditions and professional isolationism. The majority of nursing staff leaving an area do so after fulfilling a six month period. The main reasons for leaving are as follows:—

I. Transfers—to join other Public Health and Medical Service Sections.
II. To reside elsewhere—
  (i) overseas—study
    personal problems
    overseas posting of husband
    repatriation
  (ii) interstate—study
    personal reasons

WESTERN AUSTRALIA

STATISTICAL DIVISION BOUNDARY
C.H.S. REGIONS

KALUMBURU
DOMBUNGARRI
WYNDHAM
EAST KIMBERLEY
KUNUNURRA
ONE ARM POINT
LOMBARDINA
BEAGLE BAY
WEST KIMBERLEY
DERBY
LOOMA
BROOME
FITZROY CROSSING
HALLS CREEK
LA GRANGE
BALGO HILLS
PORT HEDLAND
STRELLY
KARRATHA
MARBLE BAR
PILBARA
ONSLOW
NULLAGINE
MT. NEWMAN
JIGALONG
CARNARVON
NORTHERN
MEEKATHARRA
WILUNA
WARBURTON
EASTERN GOLDFIELDS
MULLEWA
MT. MAGNET
LAVERTON
LEONORA
GERALDTON
DALWALLINU
NORTHERN
KALGOORLIE
KAMBALDA
KELLERBERRIN
SOUTHERN CROSS
NORTHAM
NORSEMAN
PERTH
PINGELLY
SOUTH
NARROGIN
WEST
BUNBURY
CAPEL
WAGIN
ESPERANCE
KATANNING
BUSSELTON
GNOWANGERUP
MANJIMUP
SOUTHERN
MT. BARKER
ALBANY

III. Family Reasons—
family problems
maternity
marriage

IV. Ill Health

V. Unsuited to the work

Aides:

(i) Ill Health
(ii) Family commitments
(iii) Maternity

Assistants:

(i) Terminated employment
(ii) Family
(iii) Moved from district
(iv) Just Left

Changes have also occurred in the hierachy of the Service. In late 1974 our esteemed first Director, Dr. L. J. Holman, moved and is now Director-General of Public Health; Dr. Ann Troup was appointed Director. The Nursing Supervisor, Miss M. Reid, became Director of Community Nursing and was replaced by Miss R. Conway in December 1975. In the regions several changes occurred, notably Dr. R. Spargo, Regional Medical Officer, Kimberley, leaving to undertake postgraduate studies in the U.S.A., relieved by Dr. K. Bewley. Dr. Quadros, Regional Medical Officer, Pilbara, moved to Perth as Acting Deputy Director and he was replaced by Dr. Psaila.

3. FINANCE

The method of regional accounting this year failed due to the inability of the Accounts Branch machines to cope with the data input. This resulted in insufficient information being provided against each Region's actions and tended to set expenditure against administration. The Accountant has advised that a new system will be introduced in the 1976/77 financial year which will adequately provide for the requirements of the Branches.

The 1974/75 financial year budget allocation to Community Health Services for contingencies was $1 582 000 excluding accommodation and staff $1 435 500.

The 1975/76 financial year budget allocation was increased slightly mainly due to inflation. Contingencies comprised $1 496 000 (excluding accommodation) and salaries $3 157 000.

Arrangements regarding the carry forward of committed but not expended funds from each financial year into the first quarter of the subsequent financial year have continued and planning for this manoeuvre is essential to maximise fund allocations.

The matter of financial estimating, forecasting and accountability weighs heavily on the Assistant Administrative Officer and staff assistance of suitable ability is required to maintain this important function.

The process of providing information for the coming financial year has been improved and greater liaison with the Department of Aboriginal Affairs has been experienced and appreciated.

4. STATISTICS 1975

The mean population of Western Australia in 1975 was 1 126 627 persons. Separate figures are not available at this time for age groups or for the Aboriginal population. For the purposes of processing morbidity rates two assumptions have been made:—

(1) that the rate in increase in each age group is the same as that of the population as a whole, and

(2) that the increase in Aboriginal population is the same as for the total population per five year age group. On this basis the mean Aboriginal population in Western Australia in 1975 was 31 226.

Statistics presented which involve rates should be interpreted in the light of the above constraints.

Please note the following appendices:

(i) Hospital Bed Days
(ii) Hospital Discharges by Age, Race and Principal Condition
(iii) Hospital Discharge Rates/1 000 population by Principal Condition
(iv) Comparison 1974/75 Ratio of Rates of Discharges from Hospital/ 1 000 population.

From these figures it will be noted that where impact could be made by measures in improving basic hygiene and raising living standards there has been a reduction in these conditions:

	1971	1975
Infective and Parasitic Diseases	12·3	9·1
Skin and Subcutaneous	7·1	4·8
Respiratory System	4·9	4·8
Nervous and Sense Organs (in this category chronic infections play a major role)	5·1	3·7
Perinatal Morbidity	2·3	1·8
Endocrine, Nutritional, Metabolic	4·5	4·3
However, an increase is noted:		
Blood and Blood Forming Organs	4·5	5·5
Mental Disorders	1·3	1·6

Certain factors may account for this:

(i) Early detection through more intensive screening and the medical audit;
(ii) Because of changing life style and integration into the industrialised society mental conditions, digestive disorders and circulatory system diseases would tend to increase.
(iii) Because of greater health awareness, earlier hospitalisation.

An interesting point is that pregnancy and childbirth has increased in the 10–19 age group.

ESTIMATED 1975 ABORIGINAL MEAN POPULATION

Years	Persons	Females	
0–4	5 271	....	
5–9	4 737	....	
10–14	4 211	2 088	
15–19	3 133	1 523	
20–24	2 440	1 230	
25–29	2 082	992	
30–34	1 753	851	
35–39	1 576	749	
40–44	1 049	623	
45–49	1 036	510	
50–54	954	458	
55–59	652		
60–64	740	Ages 10–54	9 024
65–69	616		
70+	976		
All ages	31 226		

MATERNAL MORTALITY

Maternal Deaths

Year	Aboriginal	Non-Aboriginal	Total
1972	1	2	3
1973	1	3	4
1974	1	1	2
1975	0	4	4

1975 ABORIGINAL STATISTICS

Births By Region

Region	Aboriginal	Non-Aboriginal
Kimberley	239	141
Pilbara	110	722
Northern	103	215
Eastern Goldfields	87	895
South West	283	3 989
Metropolitan	164	13 140
Elsewhere	17	192
Totals	1 003	19 294

1975 W.A. ABORIGINAL MORBIDITY STATISTICS

Rates of Discharges from W.A. Hospitals Per Thousand Population by Region

Region	Discharges	Estimated Population	Rate/1 000	Ratio to Rate/1 000 Total Non-Aboriginal Population
South West	5 933	6 172	961·3	4·4
Eastern Goldfields	1 988	3 363	591·1	2·7
Northern	1 864	3 285	567·4	2·6
Kimberley	3 785	7 596	498·3	2·3
Pilbara	1 720	4 165	413·0	1·9
Metropolitan	1 751	6 645	263·5	1·2
Elsewhere	58	*	*	*
Total	17 099	31 226	547·6	2·5

W.A. ABORIGINAL MORBIDITY STATISTICS—HOSPITAL BED DAYS

I.C.D. Category	Principal Condition	1975 Days in Hospital		1975 Bed Days per Thousand Population		Ratio Aboriginal/Non-Aboriginal				
		Aboriginal	Non Aboriginal	Aboriginal	Non Aboriginal	1975	1974	1973	1972	1971
000–136	Infective and Parasitic	22 641	51 057	725·1	46·6	15·6	18·7	19·3	18·1	18·0
140–239	Neoplasms	1 497	119 030	47·4	108·7	0·4	0·4	0·5	0·7	0·5
240–279	Endocrine, Nutritional, Metabolic	7 059	32 210	226·1	29·4	7·7	7·3	6·1	4·9	6·8
280–289	Blood and Blood Forming Organs	2 021	8 336	64·7	7·6	8·5	3·7	4·2	3·5	5·0
290–315	Mental Disorders	2 630	80 604	84·2	73·6	1·1	1·0	1·3	0·7	0·6
320–389	Nervous System and Sense Organs	9 698	77 140	310·6	70·4	4·4	5·7	6·2	7·1	6·1
390–458	Circulatory System	8 162	220 011	261·4	200·8	1·3	1·1	0·9	1·2	0·8
460–519	Respiratory System	29 506	146 670	944·9	133·9	7·1	6·6	6·4	7·2	6·3
520–577	Digestive System	3 925	157 452	125·7	143·7	8·7	2·6	0·9	1·0	0·9
580–629	Genito-Urinary System	4 726	129 553	151·3	118·3	1·3	1·3	1·3	1·2	1·4
630–678	Pregnancy and Childbirth	11 677	199 574	1 294·0	506·2	2·6	2·4	2·2	1·8	1·6
680–709	Skin and Subcutaneous Tissue	7 671	44 897	245·7	41·0	6·0	6·2	8·1	7·4	7·6
710–738	Musculoskeletal System	2 808	121 149	89·9	110·6	0·8	0·8	0·8	0·8	0·7
740–759	Congenital Anomalies	935	15 105	29·9	13·8	2·2	5·4	2·5	3·1	2·2
760–779	Perinatal Morbidity	1 868	9 116	59·8	8·3	7·2	4·4	3·2	5·4	5·7
780–796	Symptoms and Illdefined Conditions	15 507	133 903	496·6	122·2	4·1	4·0	2·7	2·9	4·2
N800–N999	Accidents, Poisoning, Violence	20 340	206 570	651·4	188·6	3·4	3·3	2·6	2·6	4·5
Y00–Y89	Supplementary Classifications	5 423	59 656	173·7	54·5	3·2	3·6	4·8	4·3	2·2
	ALL CONDITIONS	158 314	1 812 033	5 069·9	1 654·1	3·1	3·1	3·1	3·1	3·0

1975 W.A. HOSPITAL MORBIDITY STATISTICS—HOSPITAL DISCHARGES BY AGE GROUP, RACE AND PRINCIPAL CONDITION

(A=ABORIGINAL NA=NON-ABORIGINAL)

I.C.D. Categories	Principal Condition	Age Groups															
		0–4		5–9		10–14		15–19		20–24		25–29		30–34		35–39	
		A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA
000–136	Infective and Parasitic	1 663	2 921	151	931	69	605	55	607	42	699	30	537	23	332	21	270
140–239	Neoplasms	1	199	3	166	1	150	4	242	5	323	5	361	3	385	17	382
240–279	Endocrine, Nutritional, Metabolic	100	384	6	53	3	69	3	100	5	136	6	168	17	143	25	189
280–289	Blood and Blood Forming Organs	57	110	19	128	11	102	15	67	10	55	20	46	7	35	6	31
290–315	Mental Disorders	5	193	2	51	7	68	14	269	22	452	32	513	46	546	23	566
320–389	Nervous System and Sense Organs	489	1 539	210	1 256	92	572	41	425	36	532	38	604	43	596	55	636
390–458	Circulatory System	10	34	21	69	29	96	14	131	17	277	13	472	16	664	37	786
460–519	Respiratory System	1 962	6 552	398	4 629	146	1 936	113	1 661	121	1 427	100	1 208	84	961	99	675
520–577	Digestive System	92	1 287	51	1 473	38	1 630	38	2 067	49	2 084	47	1 845	49	1 254	37	1 191
580–629	Genito-Urinary System	77	659	49	349	33	328	99	1 447	85	2 671	89	3 418	52	2 906	49	2 406
630–678	Pregnancy and Childbirth	....	....	....	....	17	40	467	3 218	462	9 833	258	9 245	117	3 537	62	1 144
680–709	Skin and Subcutaneous Tissue	251	559	147	383	71	451	45	678	54	633	61	544	44	419	37	349
710–738	Musculoskeletal System	14	157	35	190	20	376	16	747	17	998	33	1 070	24	1 062	24	1093
740–759	Congenital Anomalies	36	801	11	391	3	258	1	176	2	108	1	91	....	62	2	45
760–779	Perinatal Morbidity	72	773	....	....	....	....	....	....	....	....	....	....	....	....	....	....
780–796	Symptoms and Illdefined Conditions	446	2 090	180	1 146	114	981	121	1 026	121	1 199	96	1 280	85	1 058	83	936
N800–N999	Accidents, Poisoning, Violence	360	3 071	218	2 215	147	2 388	223	3 690	295	3 637	251	2 498	227	1 815	185	1 415
Y00–Y89	Supplementary Classifications	111	861	24	285	17	284	98	976	90	2 308	79	2 947	47	2 641	55	1 922
	All Conditions	5 746	22 190	1 525	13 715	818	10 334	1 367	17 527	1 433	27 372	1 159	26 847	884	18 416	817	14 036

1975 W.A. HOSPITAL MORBIDITY STATISTICS—HOSPITAL DISCHARGES BY AGE GROUP, RACE AND PRINCIPAL CONDITION

(A=ABORIGINAL NA=NON-ABORIGINAL)

I.C.D. Categories	Principal Condition	Age Groups																	
		40–44		45–49		50–54		55–59		60–64		65–69		70+		Not Stated		Total All Ages	
		A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA
000–136	Infective and Parasitic	28	195	28	221	15	202	8	158	16	220	14	193	18	402	24	7	2 205	8 500
140–239	Neoplasms	9	558	13	679	5	757	3	814	7	1 038	5	1 197	7	2 285	....	2	88	9 538
240–279	Endocrine, Nutritional, Metabolic	24	151	35	205	21	192	16	182	33	209	19	233	27	429	11	3	351	2 846
280–289	Blood and Blood Forming Organs	4	40	7	54	4	65	3	45	3	55	3	76	3	241	1	....	173	1 150
290–315	Mental Disorders	33	504	30	586	8	582	3	445	8	351	8	244	9	376	3	3	253	5 749
320–389	Nervous System and Sense Organs	41	598	42	663	26	664	13	597	21	613	13	604	23	1 330	16	5	1 119	11 234
390–458	Circulatory System	44	882	47	1 218	31	1 457	33	1 441	40	1 844	29	1 850	55	4 563	17	10	453	15 794
460–519	Respiratory System	106	600	88	681	72	734	75	834	88	931	61	1 077	74	2 439	37	15	3 624	26 360
520–577	Digestive System	33	1 147	27	1 423	25	1 389	12	1 151	12	1 248	10	1 053	14	1 827	6	12	540	22 073
580–629	Genito-Urinary System	42	2 569	16	2 020	11	1 891	10	1 005	21	806	10	769	12	1 340	7	12	662	24 596
630–678	Pregnancy and Childbirth	21	294	6	36	....	1	....	1	....	....	....	....	....	....	8	6	1 418	27 355
680–709	Skin and Subcutaneous Tissue	41	318	31	431	24	396	15	350	24	349	27	289	28	576	19	4	919	6 729
710–738	Musculoskeletal System	26	1 063	21	1 043	12	1 039	9	945	7	931	11	732	8	1 448	10	9	287	12 603
740–759	Congenital Anomalies	1	50	1	33	....	38	....	26	....	24	....	11	....	42	....	....	58	2 156
760–779	Perinatal Morbidity	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	72	776
780–796	Symptoms and Illdefined Conditions	64	842	80	942	44	941	38	835	54	982	54	872	79	2 182	35	11	1 694	17 323
N800–N999	Accidents, Poisoning, Violence	171	1 239	110	1 220	66	1 094	44	888	50	816	52	731	43	1 982	51	40	2 473	23 739
Y00–Y89	Supplementary Classifications	24	1 322	16	929	8	692	6	524	11	471	8	401	16	607	20	10	630	17 180
	All Conditions	712	12 372	598	12 384	372	12 134	288	10 241	395	10 880	304	10 332	416	21 769	265	152	17 099	240 701

1975 W.A. HOSPITAL DISCHARGE RATES PER THOUSAND OF POPULATION—BY PRINCIPAL CONDITION, AGE GROUPS AND RACE

(A=ABORIGINAL NA=NON-ABORIGINAL)

I.C.D. Categories	Principal Condition	Age Groups															
		0–4		5–9		10–14		15–19		20–24		25–29		30–34		35–39	
		A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA
000–136	Infective and Parasitic	315·5	27·6	31·9	9·0	16·4	5·6	17·6	6·0	17·2	7·4	14·4	5·7	13·1	4·4	13·3	4·0
140–239	Neoplasms	0·2	1·9	0·6	1·6	0·2	1·4	1·3	2·4	2·1	3·4	2·4	3·8	1·7	5·1	10·8	5·7
240–279	Endocrine, Nutritional, Metabolic	19·0	3·6	1·3	0·5	0·7	0·6	1·0	1·0	2·1	1·4	2·9	1·8	9·7	1·9	15·9	2·8
280–289	Blood and Blood Forming Organs	10·8	1·0	4·0	1·2	2·6	0·9	4·8	0·7	4·1	0·6	9·6	0·5	4·0	0·5	3·8	0·5
290–315	Mental Disorders	0·9	1·8	0·4	0·5	1·7	0·6	4·5	2·6	9·0	4·8	15·4	5·4	26·2	7·3	14·6	8·5
320–389	Nervous System and Sense Organs	92·8	14·5	44·3	12·2	21·8	5·3	13·1	4·2	14·8	5·6	18·3	6·4	24·5	7·9	34·9	9·5
390–458	Circulatory System	1·9	0·3	4·4	0·7	6·9	0·9	4·5	1·3	7·0	2·9	6·2	5·0	9·1	8·8	23·5	11·8
460–519	Respiratory System	372·2	61·8	64·0	44·9	34·7	18·0	36·1	16·3	49·6	15·1	48·0	12·8	47·9	12·8	62·8	10·1
520–577	Digestive System	17·4	12·1	10·8	14·3	9·0	15·2	12·1	20·3	20·1	22·1	22·6	19·5	28·0	16·7	23·5	17·8
580–629	Genito-Urinary System	14·6	6·2	10·3	3·4	7·8	3·0	31·6	14·2	34·8	28·3	42·7	36·1	29·7	38·7	31·1	36·0
630–678	Pregnancy and Childbirth	....	....	....	....	8·1	0·8	306·6	63·0	375·6	185·5	260·1	186·2	137·5	77·4	82·8	25·6
680–709	Skin and Subcutaneous Tissue	47·6	5·3	31·0	3·7	16·9	4·2	14·4	6·7	22·1	6·7	29·3	5·7	25·1	5·6	23·8	5·2
710–738	Musculoskeletal System	2·7	1·5	7·4	1·8	4·7	3·5	5·1	7·3	7·0	10·6	15·9	11·3	13·7	14·1	15·2	16·4
740–759	Congenital Anomalies	6·8	7·6	2·3	3·8	0·7	2·0	0·3	1·7	0·8	1·1	0·5	1·0	....	0·8	1·3	0·7
760–779	Perinatal Morbidity	71·7	40·1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
780–796	Symptoms and Illdefined Conditions	84·6	19·7	38·0	11·1	27·1	9·1	67·7	10·1	49·6	12·7	46·1	13·5	48·5	14·1	52·7	14·0
N800–N999	Accidents, Poisoning, Violence	68·3	29·0	46·0	22·2	34·9	22·2	71·2	36·3	120·9	38·6	120·6	26·4	129·5	24·2	117·4	21·2
Y00–Y89	Supplementary Classifications	21·1	8·1	5·1	2·8	4·0	2·6	31·3	9·6	36·9	24·4	37·9	31·2	26·8	35·2	34·9	28·8
	All Conditions	1090·1	209·4	321·9	133·1	194·3	96·2	436·3	172·3	587·3	290·3	556·7	283·8	504·3	245·3	518·4	201·2

1975 W.A. HOSPITAL DISCHARGE RATES PER THOUSAND OF POPULATION—BY PRINCIPAL CONDITION, AGE GROUPS AND RACE

(A=ABORIGINAL NA=NON-ABORIGINAL)

I.C.D. Categories	Principal Condition	Age Groups															
		40–44		45–49		50–54		55–59		60–64		65–69		70+		All Ages	
		A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA	A	NA
000–136	Infective and Parasitic	26·7	3·1	27·0	3·6	15·7	3·7	12·3	3·7	21·6	5·4	22·7	5·8	18·4	7·7	70·6	7·8
140–239	Neoplasms	8·6	9·0	12·5	11·2	5·2	13·7	4·6	18·9	9·5	25·4	8·1	36·2	7·2	44·0	2·8	8·7
240–279	Endocrine, Nurtitional, Metabolic	22·9	2·4	33·8	3·4	22·0	3·5	24·5	4·2	44·6	5·1	30·8	7·1	27·7	8·3	11·2	2·6
280–289	Blood and Blood Forming Organs	3·8	0·6	6·8	0·9	4·2	1·2	4·6	1·0	4·1	1·3	4·9	2·3	3·1	4·6	5·5	1·0
290–315	Mental Disorders	31·4	8·1	29·0	9·6	8·4	10·6	4·6	10·3	10·8	8·6	13·0	7·4	9·2	7·2	8·1	5·2
320–389	Nrevous System and Sense Organs	39·1	9·7	40·5	10·9	27·3	12·0	19·9	13·8	28·4	15·0	21·1	18·3	23·6	25·6	38·4	10·3
390–458	Circulatory System	41·9	14·2	45·4	20·0	32·5	26·4	50·6	33·4	54·1	45·2	47·1	56·0	56·4	87·9	14·5	14·4
460–519	Respiratory System	101·0	9·7	84·9	11·2	75·5	13·3	115·0	19·3	118·9	22·8	99·0	32·6	75·8	47·0	116·1	24·1
520–577	Digestive System	31·5	18·5	26·1	23·4	26·2	25·2	18·4	26·7	16·2	30·6	16·2	31·9	14·3	35·2	17·3	20·1
580–629	Genito-Urinary System	40·0	41·5	15·4	33·3	11·5	34·3	15·3	23·3	28·4	19·8	16·2	23·3	12·3	25·8	21·2	22·5
630–678	Pregnancy and Childbirth	33·7	8·3	11·8	1·1	....	0·03	....	0·01	....	....	....	....	....	....	157·1	69·3
680–709	Skin and Subcutaneous Tissue	39·1	5·1	29·9	7·1	25·1	7·2	23·0	8·1	32·4	8·5	43·8	8·7	28·7	11·1	29·4	6·1
710–738	Musculoskeletal System	24·8	17·2	20·2	17·2	12·6	18·8	13·8	21·9	9·5	22·8	17·9	22·2	8·2	22·1	9·2	11·5
740–759	Congenital Anomalies	1·0	0·8	1·0	0·5	....	0·7	....	0·6	....	0·6	....	0·3	....	0·8	1·9	2·0
760–779	Perinatal Morbidity	....	....	....	....	....	....	....	....	....	....	....	....	....	....	71·7	40·1
780–796	Symptoms and Illdefined Conditions	61·0	13·6	77·2	15·5	46·1	17·1	58·3	19·3	73·0	24·1	87·7	26·4	80·9	54·2	54·2	15·8
N800–N999	Accidents, Poisoning, Violence	163·0	20·0	106·2	20·1	69·2	19·9	67·5	20·6	67·6	20·0	51·9	22·1	44·1	38·2	79·2	26·2
Y00–Y89	Supplementary Classifications	22·9	21·4	15·4	15·3	8·4	12·6	9·2	12·1	14·9	11·5	13·0	12·1	16·4	11·7	20·2	15·7
	All Conditions	678·7	200·0	577·2	204·0	389·9	220·2	441·7	237·2	533·8	266·8	493·5	312·9	426·2	419·1	547·6	219·7

W.A. ABORIGINAL MORBIDITY STATISTICS—COMPARISON 1974 AND 1975

RATIO OF RATES OF DISCHARGES FROM W.A. HOSPITALS PER THOUSAND POPULATION

ABORIGINAL TO NON-ABORIGINAL BY FIVE YEAR AGE GROUP AND PRINCIPAL CONDITION

I.C.D. Categories	Principal Condition	Age Groups																	
		0–4		5–9		10–14		15–19		20–24		25–29		30–34		35–39		40–44	
		1974	1975	1974	1975	1974	1975	1974	1975	1974	1975	1974	1975	1974	1975	1974	1975	1974	1975
000–136	Infective and Parasitic	12·8	11·4	4·4	3·5	3·7	2·7	4·0	2·9	3·5	2·3	4·1	2·5	3·7	3·0	5·6	3·3	7·4	8·6
140–239	Neoplasms	0·4	0·1	0·2	0·4	0·5	0·1	0·3	0·3	0·8	0·6	0·3	0·6	0·5	0·3	1·1	1·9	0·7	1·0
240–279	Endocrine, Nutritional, Metabolic	6·6	5·3	1·5	2·6	4·5	1·2	0·4	1·0	2·2	1·5	1·7	1·6	4·4	5·1	5·7	5·7	8·2	9·5
280–289	Blood and Blood Forming Organs	4·7	10·8	3·3	3·3	2·1	2·9	3·7	6·9	2·6	6·8	2·0	19·2	2·4	8·0	6·5	7·6	1·3	6·3
290–315	Mental Disorders	1·0	0·5	5·0	0·8	1·4	2·8	1·9	1·7	1·9	1·9	2·2	2·9	2·0	3·6	3·8	1·7	3·3	3·9
320–389	Nervous System and Sense Organs	6·6	6·4	3·8	3·6	4·1	4·1	5·0	3·1	2·8	2·6	3·9	2·9	2·3	3·1	3·5	3·7	3·4	4·0
390–458	Circulatory System	1·5	6·3	3·5	6·3	3·6	7·7	7·1	3·5	2·4	2·4	1·0	1·2	1·9	1·0	2·2	2·0	3·1	3·0
460–519	Respiratory System	6·2	6·0	1·5	1·4	2·0	1·9	1·7	2·2	1·8	3·3	2·5	3·8	3·7	3·7	5·9	6·2	7·9	10·4
520–577	Digestive System	1·9	1·4	0·8	0·8	0·6	0·6	0·5	0·6	0·5	0·9	0·8	1·2	1·6	1·7	1·3	1·3	1·6	1·7
580–629	Genito-Urinary System	2·4	2·4	1·9	3·0	2·3	2·6	2·1	2·2	1·3	1·2	1·1	1·2	0·8	0·8	0·7	0·9	0·8	1·0
630–678	Pregnancy and Childbirth	....	....	....	....	8·2	10·1	4·1	4·9	2·0	2·0	1·2	1·4	1·5	1·8	3·5	3·2	2·9	4·1
680–709	Skin and Subcutaneous Tissue	9·9	9·0	8·0	8·4	4·7	4·0	1·7	2·1	2·8	3·3	3·4	5·1	4·5	4·5	4·9	4·5	6·3	7·7
710–738	Musculoskeletal System	3·0	1·8	1·7	4·1	1·1	1·3	0·3	0·7	0·5	0·7	0·8	1·4	0·8	1·0	1·3	0·9	1·0	1·4
740–759	Congenital Anomalies	0·9	0·9	1·0	0·6	1·2	0·3	X	0·2	0·3	0·7	X	0·5	0·7	X	1·9	1·9	2·9	1·3
760–779	Perinatal Morbidity	1·1	1·8	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
780–796	Symptoms and Illdefined Conditions	4·5	4·3	4·1	3·4	2·4	3·0	3·1	6·7	2·3	3·9	3·7	3·4	2·9	3·4	3·7	3·8	4·9	4·5
N800–N999	Accidents, Poisoning, Violence	2·0	2·4	2·4	2·1	1·3	1·6	2·2	2·0	3·1	3·1	4·8	4·6	4·8	5·4	5·0	5·5	7·8	8·2
Y00–Y89	Supplementary Classifications	2·3	2·6	1·5	1·8	1·6	1·5	3·8	3·3	2·6	1·5	1·5	1·2	1·4	0·8	0·7	1·2	0·9	1·1
	All Conditions	5·3	5·2	2·4	2·4	1·9	2·0	2·5	2·5	1·9	2·0	1·8	2·0	1·9	2·1	2·4	2·5	3·1	3·4

W.A. ABORIGINAL MORBIDITY STATISTICS—COMPARISON 1974 AND 1975

RATIO OF RATES OF DISCHARGES FROM W.A. HOSPITALS PER THOUSAND POPULATION

ABORIGINAL TO NON-ABORIGINAL BY FIVE YEAR AGE GROUP AND PRINCIPAL CONDITION

I.C.D. Categories	Principal Condition	Age Groups																
		45–49		50–54		55–59		60–64		65–69		70+		All Ages				
		1974	1975	1974	1975	1974	1975	1974	1975	1974	1975	1974	1975	1975	1974	1973	1972	1971
000–136	Infective and Parasitic	3·8	7·5	4·1	4·2	5·4	3·3	5·1	4·0	5·4	3·9	3·9	2·4	9·1	10·7	9·3	9·7	12·3
140–239	Neoplasms	0·8	1·1	0·6	0·4	0·5	0·2	0·7	0·4	0·2	0·2	0·3	0·2	0·3	0·4	0·4	0·4	0·3
240–279	Endocrine, Nutritional, Metabolic	8·0	9·9	10·0	6·3	9·1	5·8	5·0	8·7	4·6	4·3	3·3	3·3	4·3	4·8	4·9	4·3	4·5
280–289	Blood and Blood Forming Organs	2·1	7·6	1·1	3·5	1·2	4·6	3·9	3·2	0·9	2·1	0·6	0·7	5·5	2·9	3·4	4·2	2·9
290–315	Mental Disorders	2·5	3·0	1·6	0·8	1·0	0·4	1·0	1·3	0·8	1·8	1·0	1·3	1·6	1·5	1·9	1·4	1·3
320–389	Nervous System and Sense Organs	2·2	3·7	8·5	2·3	1·7	1·4	1·7	1·9	1·8	1·2	1·7	0·9	3·7	4·1	4·4	4·7	5·1
390–458	Circulatory System	1·2	2·3	1·6	1·2	1·5	1·5	1·4	1·2	1·1	0·8	0·6	0·6	1·0	1·0	0·9	0·9	0·9
460–519	Respiratory System	7·9	7·6	4·2	5·7	5·7	6·0	5·0	5·2	3·0	3·0	1·4	1·6	4·8	4·7	4·7	5·2	4·9
520–577	Digestive System	0·9	1·1	1·1	1·0	0·5	0·7	0·7	0·5	0·6	0·5	0·4	0·4	0·9	0·9	0·8	0·8	0·8
580–629	Genito-Urinary System	0·8	0·5	0·5	0·3	1·1	0·7	0·7	1·4	0·8	0·7	0·9	0·5	0·9	0·9	0·9	0·9	0·9
630–678	Pregnancy and Childbirth	6·0	10·7	X	X	....	X	....	....	....	....	....	....	2·3	2·1	1·8	1·8	1·8
680–709	Skin and Subcutaneous Tissue	4·7	4·2	3·3	3·4	1·7	2·8	3·2	3·8	2·8	5·0	1·9	2·6	4·8	5·0	6·5	6·3	7·1
710–738	Musculoskeletal System	1·6	1·2	0·3	0·7	0·8	0·6	0·6	0·4	0·8	0·8	0·2	0·4	0·8	0·7	0·7	0·8	0·9
740–759	Congenital Anomalies	X	2·0	X	X	X	X	2·0	X	X	X	X	X	1·0	1·3	1·3	1·2	1·2
760–779	Perinatal Morbidity	....	....	....	....	....	....	....	....	....	....	....	....	1·8	1·1	2·0	1·8	2·3
780–796	Symptoms and Illdefined Conditions	3·3	5·0	2·6	2·7	3·4	3·0	2·5	3·0	2·4	3·3	2·3	1·9	3·4	3·2	3·1	3·2	3·8
N800–N999	Accidents, Poisoning, Violence	6·4	5·3	11·6	3·5	4·0	3·3	2·9	3·4	1·8	2·3	0·9	1·2	3·0	3·0	2·7	2·7	2·8
Y00–Y89	Supplementary Classifications	0·5	1·0	0·6	0·7	X	0·7	1·6	1·3	0·8	1·1	0·6	1·4	1·3	1·5	1·6	1·7	1·4
	All Conditions	2·6	2·8	1·9	1·8	2·1	1·9	2·0	2·0	1·5	1·6	1·1	1·0	2·5	2·5	2·6	2·6	2·7

5. TARGETS AND AIMS

5.1 Nutrition

5.1.1 *Anthropometric surveys* have been conducted biannually on children 0–60 months. The next few charts indicate the patterns which have been based on the Harvard Standards (Jellife: The Assessment of the Nutritional Status of the Community).

(i) Weight for Age
(ii) Length for Age
(iii) Weight for Length
(iv) Weight for Head Circumference
(v) Triceps Skin Fold
(vi) Arm Circumference
(vii) Mid Arm Muscle Circumference

} All Regions Total number of children examined between 0–60 months = 2 460.

Summary for three areas:—

Age	Weight for Age	Length for Age	Weight for Length
0–3 months	33% below std	13% below std	21% below std
4–6 months	34% below std	6% below std	22% below std
7–11 months	40% below std	12% below std	21% below std
12–23 months	56% below std	29% below std	25% below std
24–35 months	57% below std	28% below std	23% below std
36–47 months	47% below std	21% below std	17% below std
48–60 months	53% below std	16% below std	13% below std

There is marked deterioration in the first year of life which corresponds to the cessation of breast feeding and introduction of bottle feeds and solid diet—with associated increase in infection.

5.1.2 *General*

From results obtained of the Annual Questionnaire submitted to staff it is apparent that the incidence of obesity in adults is on the upturn and over 950 clients are being followed up for this. The majority of these came from the Metropolitan and South West Regions where life styles have changed more markedly compared to the pastoral traditional Aborigines of the North who still have recourse to wild life and sea foods.

Iron deficiency was again noted in the South West and Kimberley areas. In the Kimberley's hookworm is prevalent. Vitamin B deficiency was noted to a lesser degree in all areas.

5.2 Health Education

This remains the priority target as it is felt that attitudes and behaviour can only be influenced through proper motivation and facilitating learning. The utilisation of camp nurses, health assistants, exemplers give an understanding of the consumers values, beliefs and expectations which, hopefully will be translated into health action within resources (ref. American Journal of Public Health—Making Health Education Work, October 1975).

Person to person contact remains the most useful way but informal and formal groups have been utilised. There are over 400 such groups throughout the State of which 95 were formed during the year. 3 821 demonstrations were given and 11 000 persons involved.

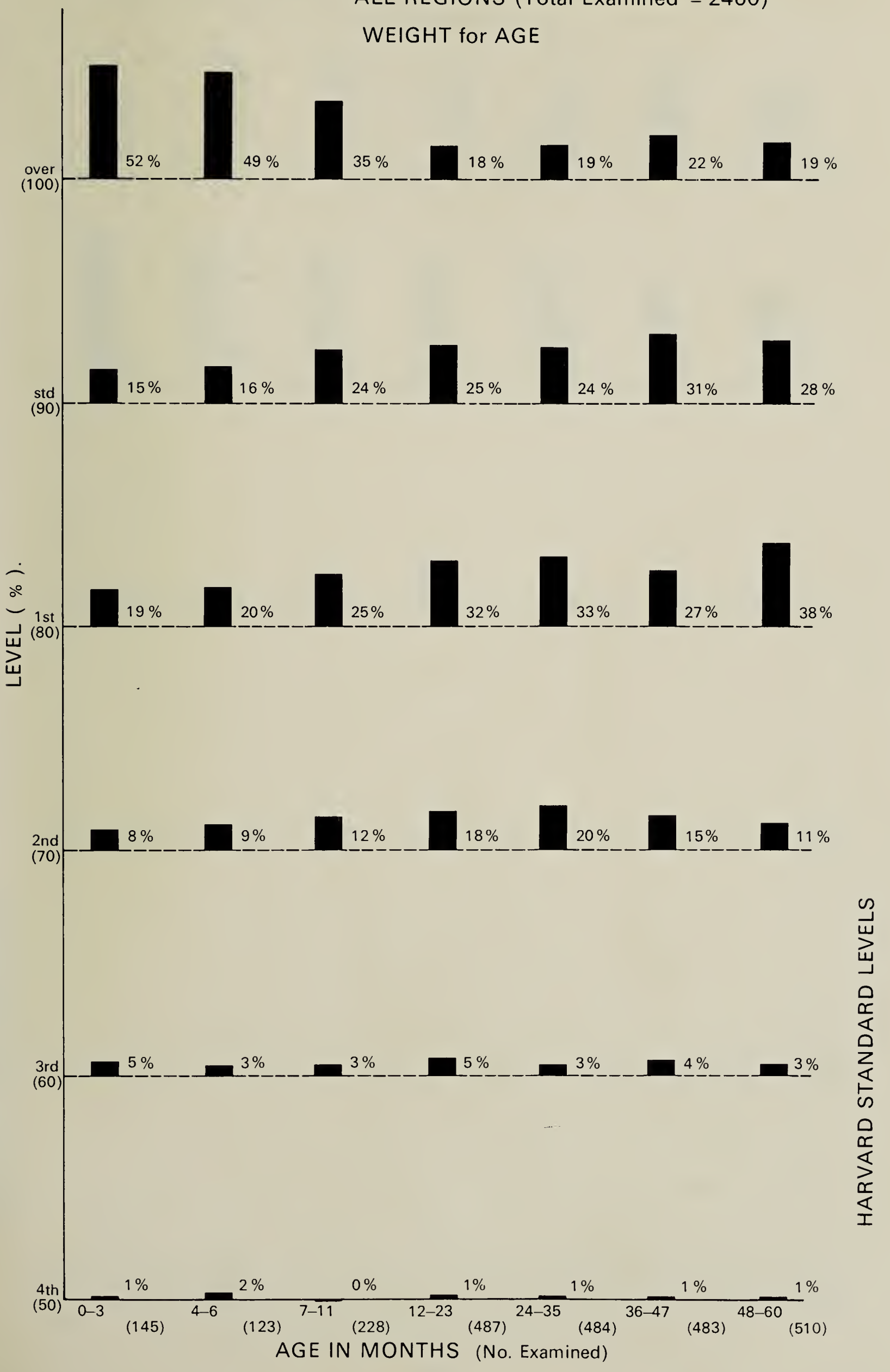
The range of subjects discussed varied according to the health problems seen by different groups, e.g. pre-natal care, sexuality, venereal diseases, drugs and alcohol, budgeting to basic hygiene and grooming. School children in Kununurra now visit the Community Health Services Centre to shower (because of poor facilities at the reserve) prior to attending school.

NUTRITIONAL ANTHROPOMETRY

1/7/75 to 31/12/75

ALL REGIONS (Total Examined = 2460)

WEIGHT for AGE

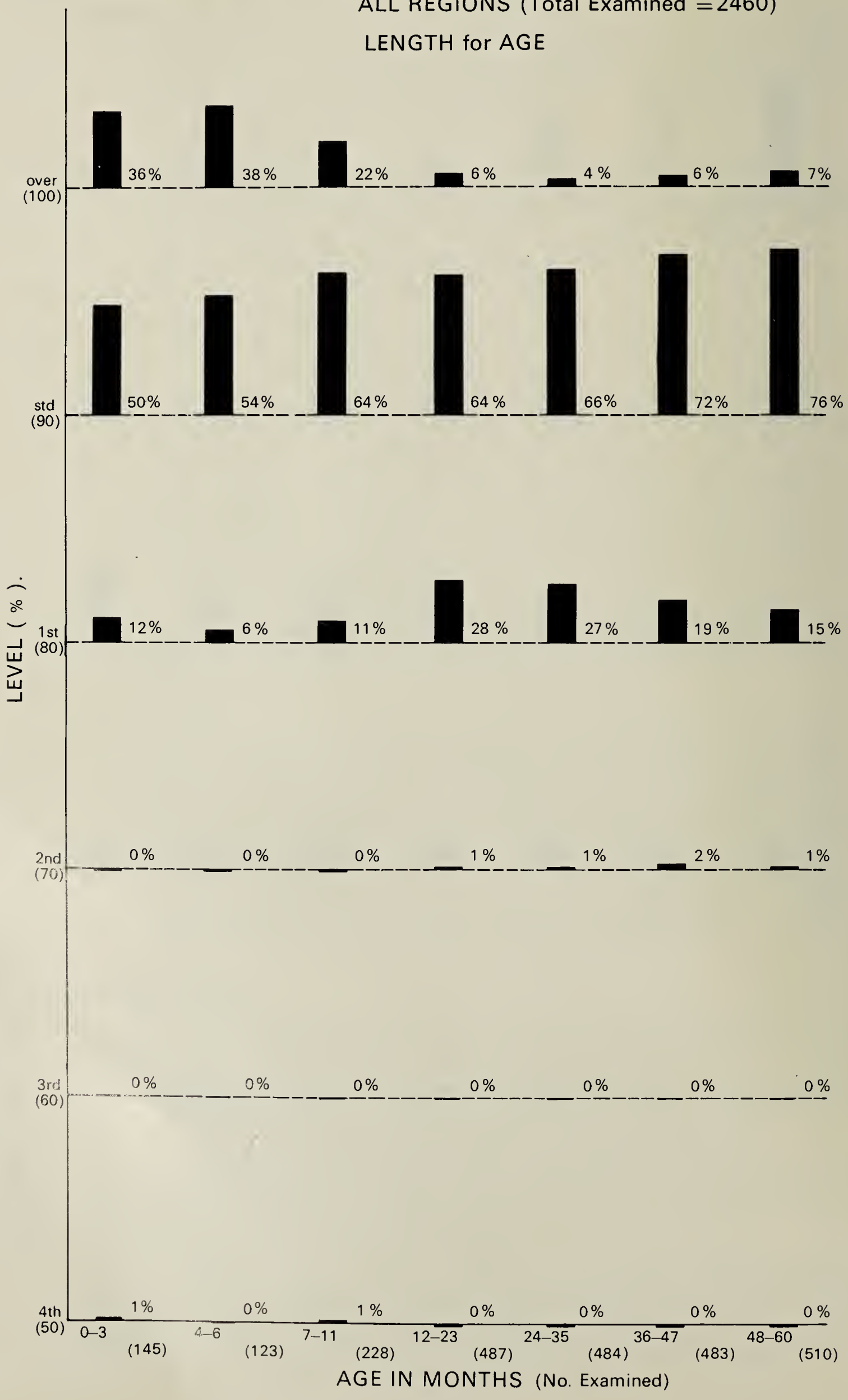


NUTRITIONAL ANTHROPOMETRY

1/7/75 to 31/12/75

ALL REGIONS (Total Examined = 2460)

LENGTH for AGE

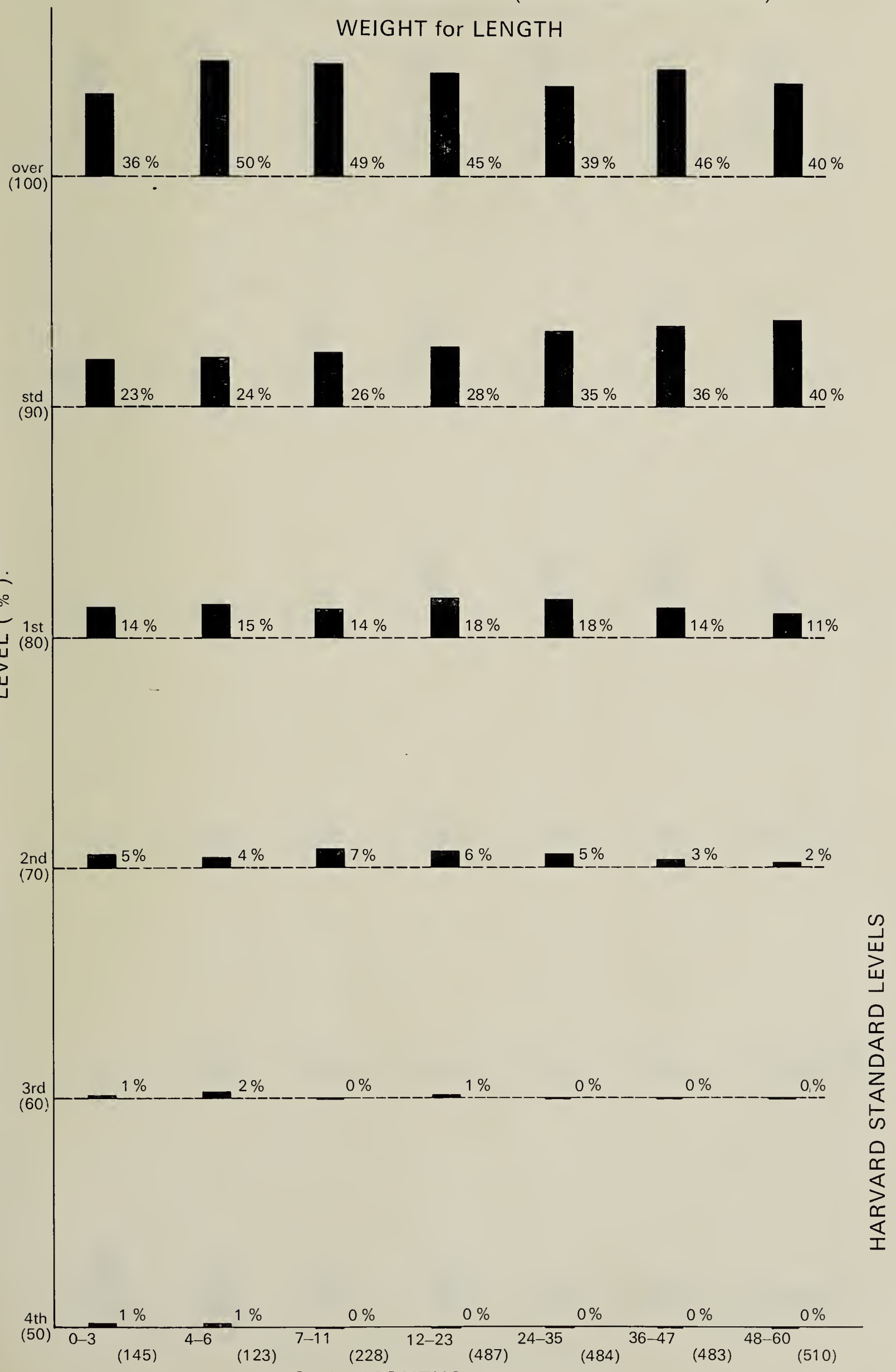


1/7/75 to 31/12/75

NUTRITIONAL ANTHROPOMETRY

ALL REGIONS (Total Examined = 2460)

WEIGHT for LENGTH

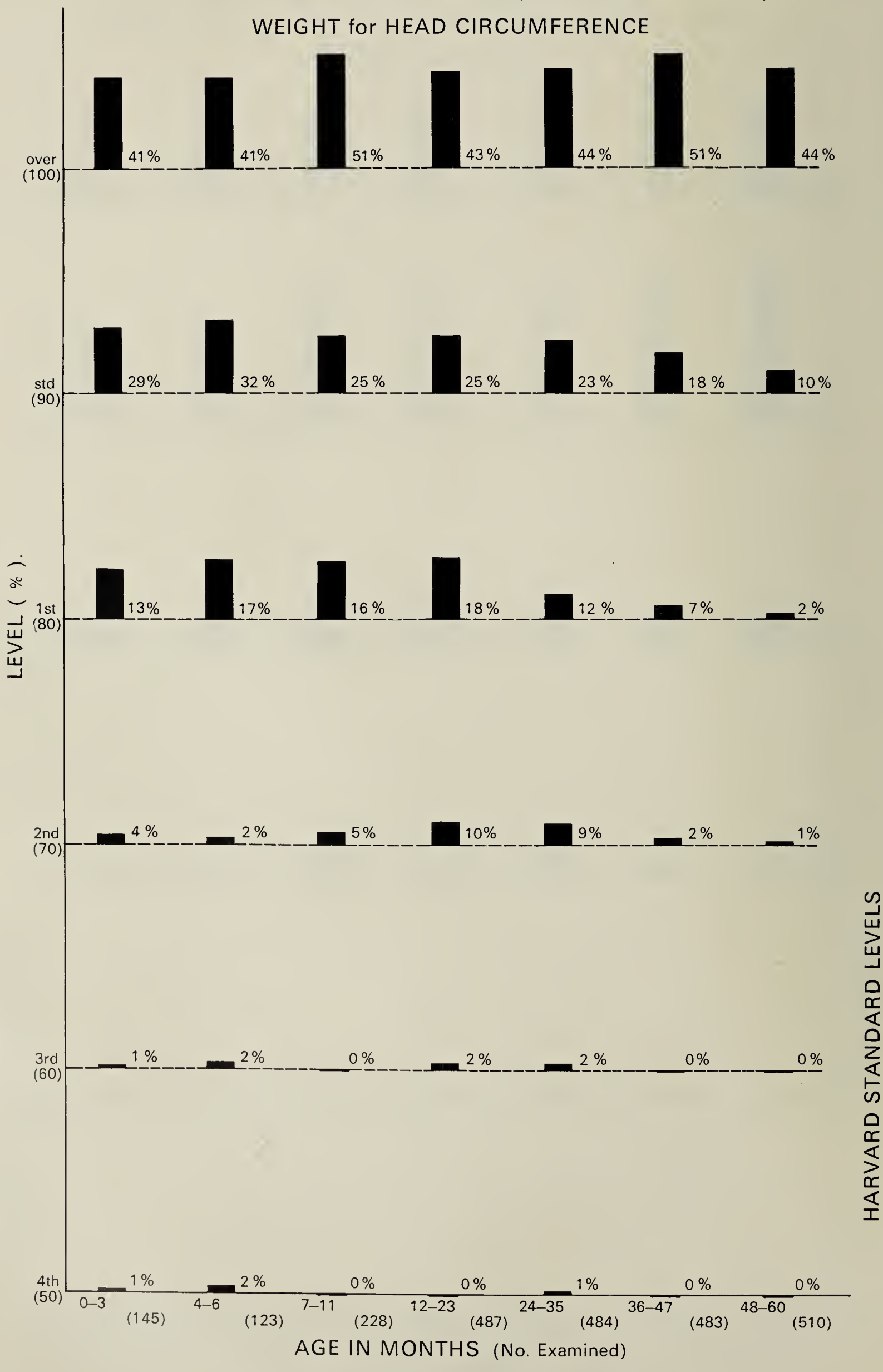


66792/11/77—(5)

NUTRITIONAL ANTHROPOMETRY

1/7/75 to 31/12/75

ALL REGIONS (Total Examined = 2460)



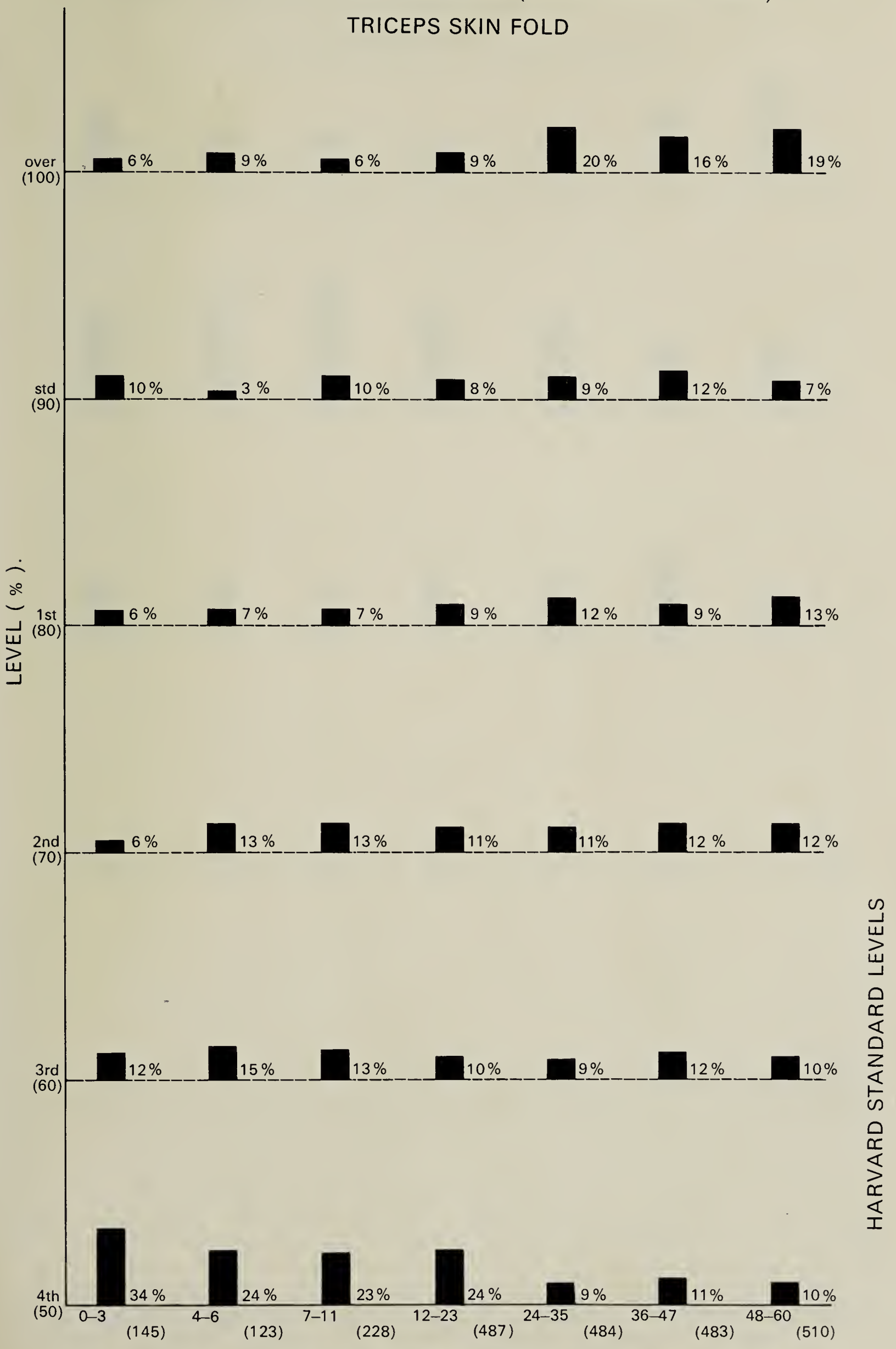
1/7/75 to 31/12/75

NUTRITIONAL ANTHROPOMETRY

V

ALL REGIONS (Total Examined = 2460)

TRICEPS SKIN FOLD

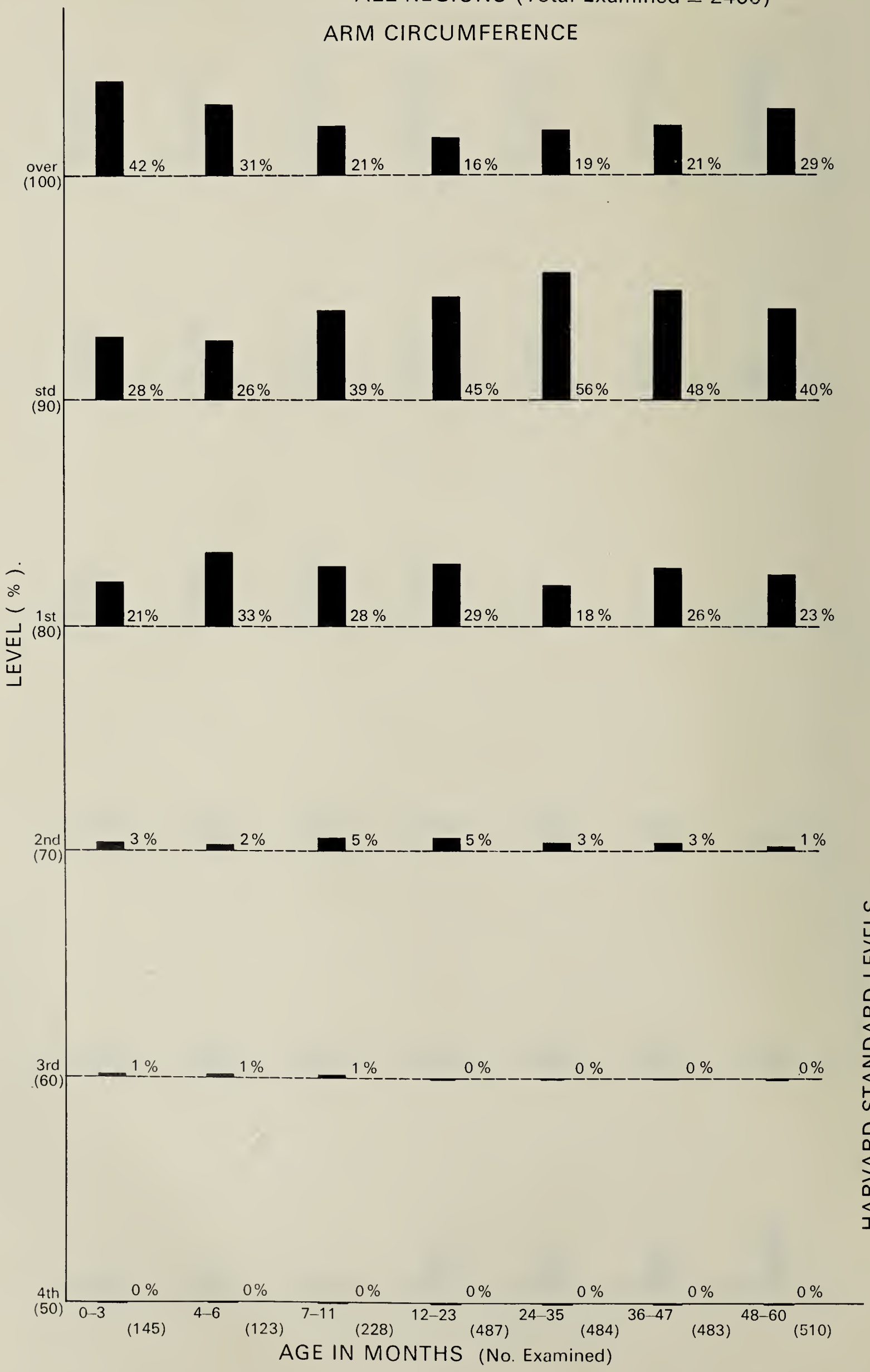


NUTRITIONAL ANTHROPOMETRY

1/7/75 to 31/12/75

ALL REGIONS (Total Examined = 2460)

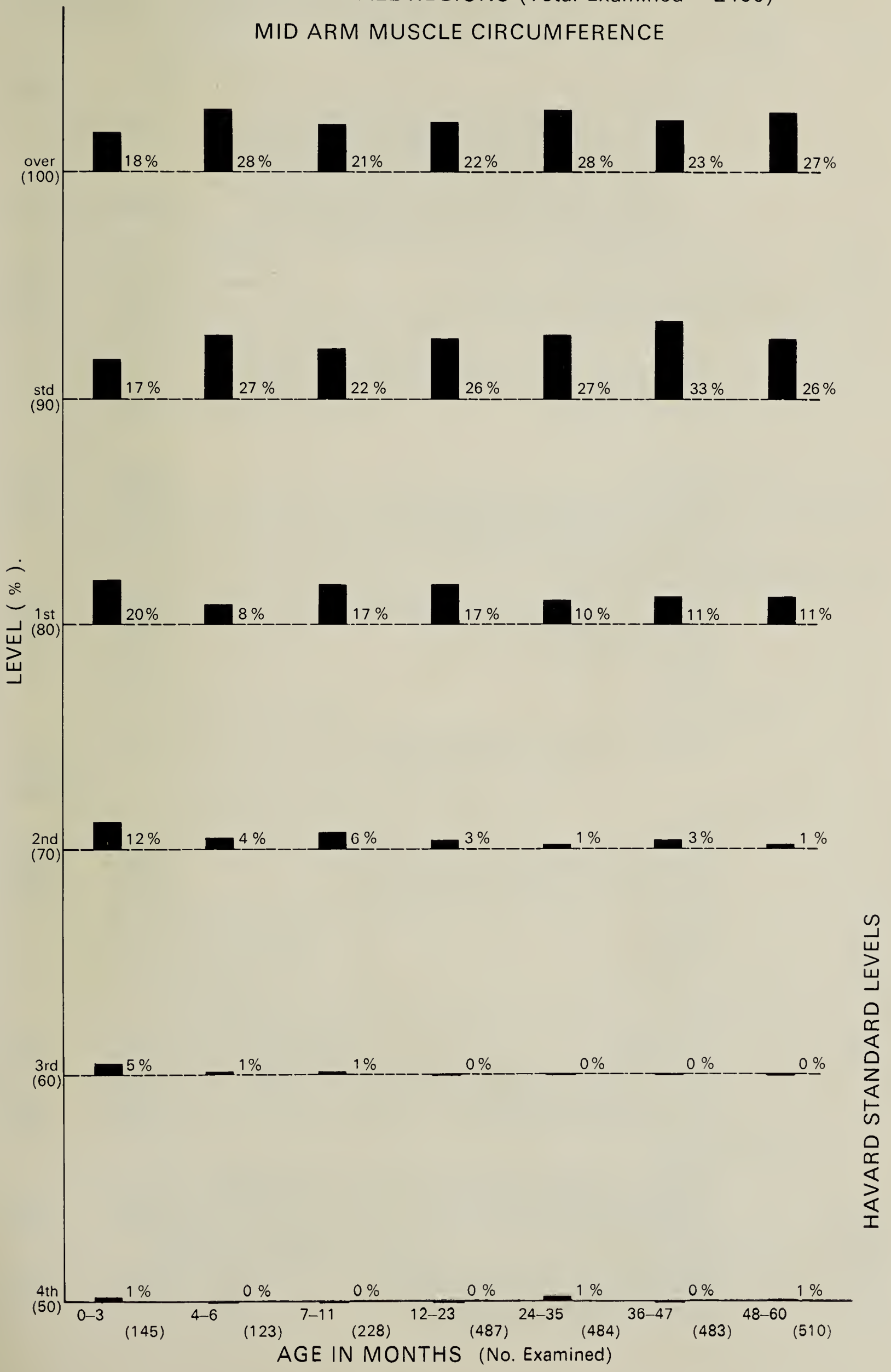
ARM CIRCUMFERENCE



NUTRITIONAL ANTHROPOMETRY

ALL REGIONS (Total Examined = 2460)

MID ARM MUSCLE CIRCUMFERENCE



5.3 Immunisation

Because of the diversity of agencies giving immunisation, particularly in the Metropolitan and South West Regions, it is difficult to assess the full status of individuals. However, Community Health Services continues to assist in promoting or giving immunisation.

	1974	1975
5.3.1 *Tetanus*		
(i) *Adults with full status:* Special areas of need were given priority, e.g. Main Roads Department field workers, Shire field workers, mill workers and mining employees working at remote camps and on track maintenance.	2 358	3 156
(ii) *Pregnant women:* As previously this segment fared better.	....	244
(iii) Clients aged 3–20 years.	3 226	5 259
(iv) 3 months—3 years.	2 788	1 628
Total number of Tetanus immunisations given or promoted	10 989	11 537
No cases reported		

	1974	1975
5.3.2 *Diptheria*		
3 months to 6 years at full status	2 587	3 199
Injections given or promoted	8 027	9 279
No cases in clients reported		
5.3.3 *Whooping Cough*		
Clients 3/12 to 6 years with full status	1 389	1 382
Injections given or promoted	4 603	4 959
Cases in clientele	22	....
Deaths	....	....
5.3.4 *Measles*		
Clients 1–10 years with full status	1 319	no figs. available
5.3.5 *Polio*		
Clients 6/12 to 15 years with full status	3 465	6 089
Clients over 15 years with full status	2 534	3 589
Immunisation given or promoted	8 244	8 306
Cases	....	....
Deaths	....	....
Contractures	....	....
5.3.6 *B.C.G.*		
Clients 0–5 years with BCG cover (North of 26th parallel)	876	1 499
Cases of T.B. in Aborigines known to our staff	11	17
Follow up in Caucasians	8	29
B.C.G. given in Schools etc.	377	968
5.3.7 *Rubella*		
Females of high school age known to have full status	736	731
Immunisations given	377	599
5.3.8 *Influenza*		
Immunisations given or promoted	3 802	420
Deaths attributed to Influenza	....	4

6. CONTROL OF ENDEMIC DISEASES

6.1 Yaws

	1974	1975
The Kimberley remains the focus of this disease		
Seropositive	72	69
Cases Treated	43	48

6.2 Hookworm and other gastro-intestinal infestations.

(see Enteric Diseases Surveillance Report)

6.3 Trachoma

Clients screened for Trachoma including non-Aboriginal school children	22 277	10 910
Recorded Treatments	4 322	3 065

Treatments varied from whole households to blanket treatment of a community, in a high prevalence area such as Balgo, Fitzroy Crossing in the Kimberley and Jigalong in the Pilbara.

It is envisaged with more frequent ophthalmologist specialist facilities monitoring will be improved.

6.4 Hansens

Dr. W. S. Davidson is the Consultant Leprologist for the Public Health Department and Dr. K. Bewley, Regional Medical Officer for the Kimberley, continued as Medical Superintendent of the Derby Leprosarium.

Regular clinics and other surveillance methods were maintained in all regions. In the Metropolitan Region a weekly clinic is held at the Community Health Services Control Centre.

Metropolitan Clinics:

Objectives:

6.4.1 Health Education

6.4.2 Improvement in housing conditions

6.4.3 Early diagnosis and treatment of all cases

6.4.4 Repeated surveillance of all contacts

6.4.5 B.C.G. Vaccination

Statistics

No. of Welfare Hostels visited	14
No. of children seen	147
Clients on Surveillance	29
No. of contacts	316
No. of new cases	3
No. transferred interstate	6
No. of clinic attendances	935
Country trips by Hansen's Field Nurses	4
Deceased	1
Transfer from Darwin to Perth	1

Kimberley

Dr. Bewley reports:

Hansen's Disease Screening Statistics for Kimberley	1 975
Numbers screened at school	1 971
Numbers screened non-school	3 707
Total	5 678

Analysis of persons screened

Contacts	573
I. Register (persons hospitalised at some stage)	285
E. Register (non-hospitalised patients on treatment)	31
Prophylactic Treatment	192
Commenced Treatment	9
Ceased Treatment	8

Assuming population of Aboriginal—7 596
per cent coverages by Survey=74·77 per cent.

NOS. OF NEW CASES 1975 IN THE KIMBERLEY (BY SOURCE)

	Lepromatous	Diamorphous	Tuberculoid	Early Stage Indeterminated Not Definitively Diagnosed Neuritic	Total Nos. New Cases
I. Category	2	3	3	0	8
E. Category	0	0	2	0	2
Total No. of New Registered Cases	2	3	5	0	10
P. Category	0	0	0	13	13
Total No. of New Cases in all Categories	2	3	5	13	23

TABLE OF NEW CASES OF HANSEN'S DISEASE IN THE KIMBERLEY FOR 1975

(By Clinical Type)

	Age (yrs)	Sex (M/F)	Race (A/NA)
A. Lepromatous (Nos.=2)	39	M	A
	12	M	A
B. Diamorphous (Nos.=3)	18	M	A
	4	F	A
	12	M	A
C. Tuberculoid (Nos.=5)	20	F	A
	14	F	A
	17	M	A
	46	F	A
	23	F	A
D.P. Category	11	M	A
i.e.—	25	F	A
Non-Definitive	55	M	A
Indeterminate	14	F	A
Early Stage	15	M	A
Neuritic cases	8	M	A
(Nos.=13)	13	F	A
	7	F	A
	13	M	A
	25	M	A
	14	M	A
	15	F	A
	15	F	A
NOTE: Two old inactive neuritic cases registered 1975 are not included in statistical calculations	57	M	A
	37	M	A

COMMENTS

1. All cases occurred among persons of Aboriginal descent (part or full).
2. Equal proportion of male and female cases. Four of the five new multibacillary cases (i.e. lepromatous and diamorphous) were under 19 years of age (range from 4–18 years). Mean age of multibacillary cases — 17 years; mean age of all cases — 18·9 years.
3. Of all categories, 20 out of 23 cases were an under 25 year age group (i.e. 86 per cent).
4. The ratio of multibacillary to paucibacillary cases reflected by the total numbers of new cases in ALL categories would seem to be more in accord with findings in other parts of the world.
5. 17 out of 23 cases came from the West Kimberley, i.e. 73 per cent.
6. Incidence of registered cases in a client population of Kimberley (taken as 7 596)

$$\frac{9}{7\ 596} = 0{\cdot}12\%$$

Incidence of cases in client population if include ALL "P" category cases

$$\frac{22}{7\ 596} = 0{\cdot}29\%$$

Relapsed Cases 1975

Seven known cases of Hansen's Disease relapsed during 1975 and gave positive bacteriological findings—see table below:—

Age	Sex	Race	Year of Dx	On Rx up to time O/A
58	M	FDA	1970	Yes
54	F	FDA	1967	
46	F	FDA	1965	Yes
45	M	PDA	1967	Yes
43	F	FDA		
30	F	FDA		Yes
47	M	FDA	1963	Yes

Comments

Age Analysis: Range 30 to 58 (see table)

Male: Female ratio equal. Race: All Aboriginal

Location: Six out of seven from West Kimberley

Treatment and Surveillance Control System

Total number of cards to date 402
Numbers in action at present 290
(i.e. excluding case ceased treatment and persons out of the Region).

This system has worked well in 1975 with several discrepancies in past control being detected and rectified.

Notifications of treatment due and returns for treatment given allow overdue cases to be identified readily and remedial measures effected.

Sr. Lelievre has performed excellent work in gearing up this system which markedly improved during the year. Local knowledge is an essential requirement for Hansen's Control Officers.

DERBY LEPROSARIUM STATISTICS FOR 1975—PATIENT MOVEMENTS

Total Nos. In-Patients as at 31/12/74

Deletions for 1975

Discharges for 1975	40
Abscondees	1*
Deaths	0
Transferred	0
	41

Additions for 1975

Admissions for 1975	19
Births†	0
	19

Total Nos. In-Patients as at 31/12/75

(a) present in Leprosarium	17
(b) away on leave	4
(c) on temporary hospital transfer	2
	23

* detected at Fitzroy Crossing. Established on treatment and not active. Discharge applied for—approved.

† one patient, whilst on hospital transfer gave birth to a female child. Mother not open at time but later relapsed requiring her transfer back to Leprosarium. Baby cared for by family at home and not admitted to Leprosarium.

Derby Leprosarium Analysis of Admissions

New Open Cases	5
Relapsed Open Cases	7
Neuritis	4
Foot ulceration, hand and skin care	3
Total number admissions 1975	19

6.5 **Monilia**

	1974	1975
Oral thrush reported and treated	183	230
Genital thrush reported and treated	no figs. given	230

6.6 **Tuberculosis**

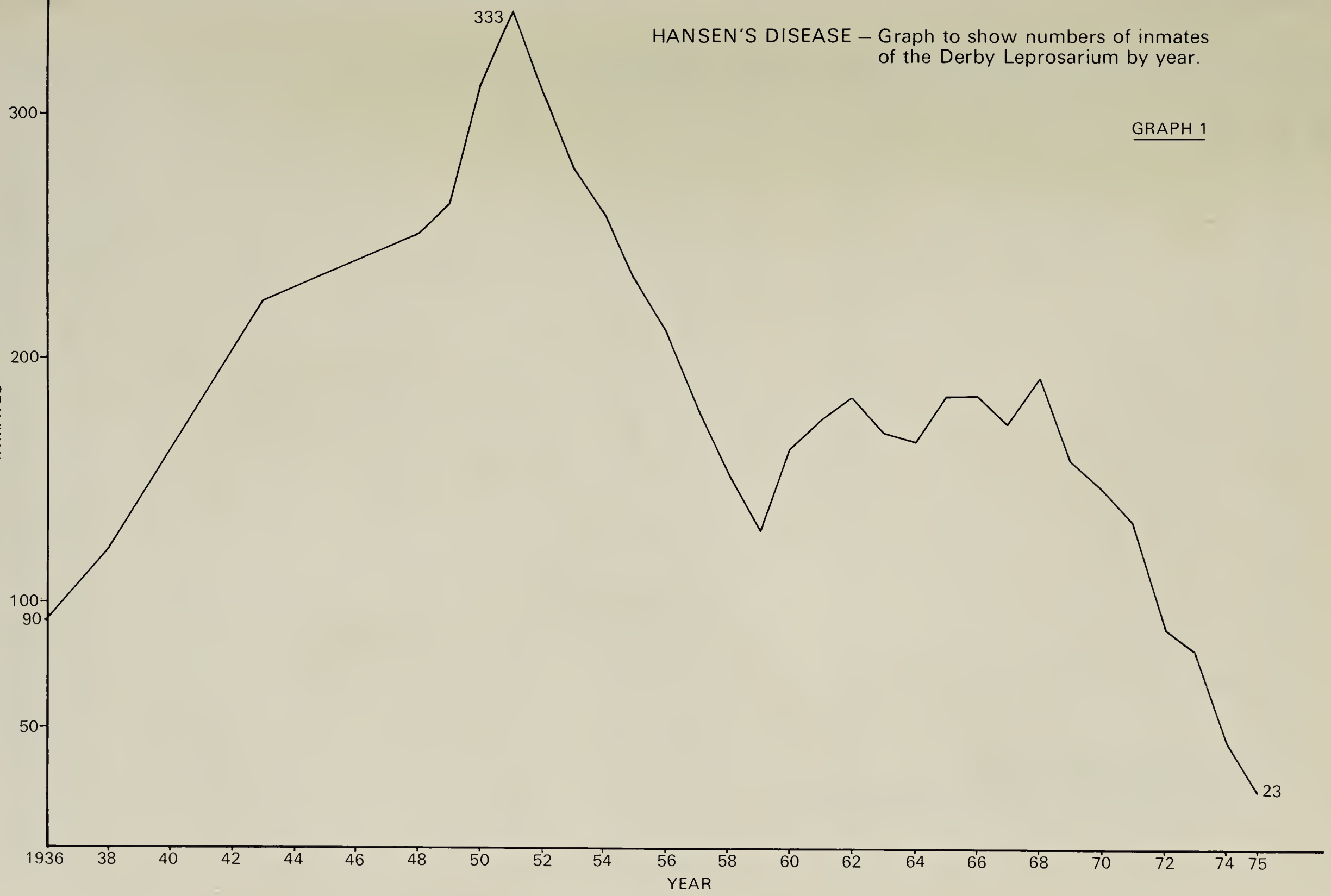
Working in liaison with the T.B. Control Branch (Perth Chest Clinic), Community Health Services have been involved with:

	1974	1975
New Cases	not stated	27
Contacts	not stated	418
Mantoux	215	602
B.C.G.	512	760

Please note that these figures will overlap those submitted by the T.B. Unit.

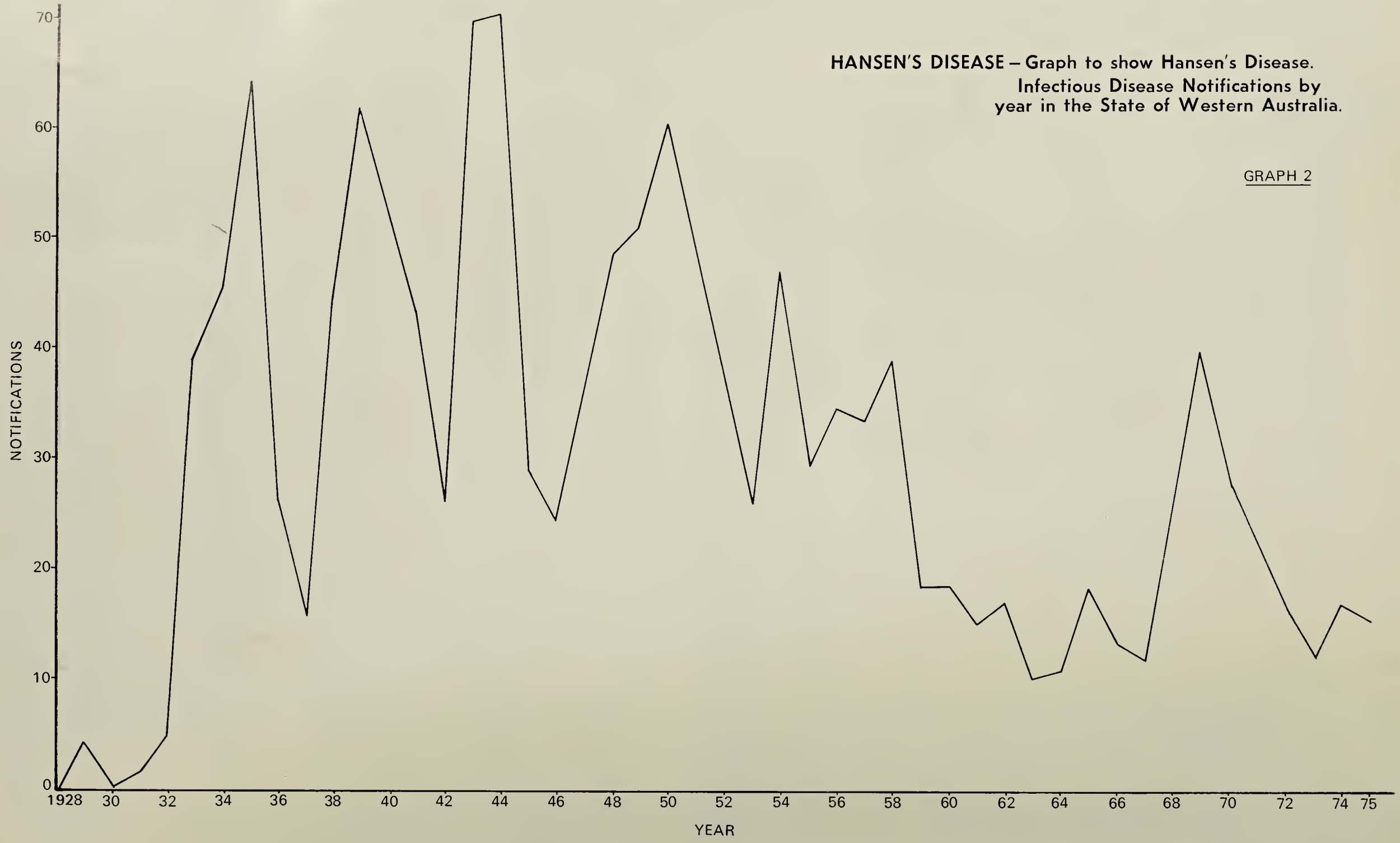
HANSEN'S DISEASE – Graph to show numbers of inmates of the Derby Leprosarium by year.

GRAPH 1



HANSEN'S DISEASE – Graph to show Hansen's Disease. Infectious Disease Notifications by year in the State of Western Australia.

GRAPH 2



6.7 Anaemia

1974

Screened 8 318 persons; follow-up and treatment 418 persons.

1975

Age	Screened	Requiring Follow-up Treatment
0– 5 years	1 452	377
6–16 years	3 188	188
17+	2 151	239
	6 791	804

6.8 Meningitis

49 cases known to staff in all regions of which 50 per cent came from the South West (14) and Goldfields (10).

7. FAMILY PLANNING

Close liaison was maintained with the Family Planning Association of W.A. During the year Family Planning Seminars were attended by field nurses. In another series of courses Aboriginal Assistants and Aides together with their husbands and wives were given an insight to family spacing, useful in counselling. Acceptance of family planning techniques varies in different areas and reflects client beliefs, culture and the practice of the local doctor.

Over 800 clients are known to be family planning.

Method	Pill	IUD	Surgical	Depot Inj.	Other
1975....	357	263	201	44	9
1974....	129	159	128	4	....

Counselling was given to more than 1 110 clients.

Main complications seen due to IUD:—

Menorrhagia	25
Transposition....	3
Loss of Contraceptive	25
Pain	16
Infection	9
Pregnancy	43

Dependency Prevention

665 cases where disease was established were followed up with a view to prevent total dependency. 197 cases were admitted to hospital for restabilisation, rehabilitation, etc. Some examples that fell into this category were epilepsy, multiple sclerosis, hypertension, diabetes, Parkinson's disease, mental disorders, arthritis, complications from Hansen's disease, etc.

Specific Medical and Social Problems

Active Case Finding: As previously, most activity was directed to Aboriginal clients.

Malady	Aborigines		Non-Aborigines	
	Detected	Follow-up	Detected	Follow-up
Diabetes	54	286	3	24
Obesity	211	543	60	59
Abnormal Child Development	83	86	42	55
Hypertension	580		65	
Urinary Tract Infection	268		140	

The following figures are for the total state population and in conjunction with the Special Clinic with whom work is carried out in close co-operation. Figures for the Metropolitan area are excluded.

GONORRHOEA—1975

West Kimberley	East Kimberley	South West (Sth.)	South West (Nth.)	Goldfields	Northern	Pilbara
194	73	34	88	34	118	162

TREPONEMAL INFECTIONS

West Kimberley	East Kimberley	South West (Sth.)	South West (Nth.)	Goldfields	Northern	Pilbara
29	105	5	35	28	40	143

Contact Tracing and Follow-up: 2 529 persons. Special mention should be made regarding duplication of notification because of mobility and changes in name; difficulties in serological differentiation of yaws; endemic syphilis which is prevalent in the North of the state and sexually transmitted syphilis.

Contact tracing still remains a problem primarily due to insufficient information and the mobility of clients.

8. MINOR ILLNESS: TRAUMA AND INFECTION

	1974	1975
Treatments given	39 530	24 108

These treatments varied considerably depending on other available health care resources. Many dressings to minor abrasions, cuts and boils are included. Emphasis remains on using camp nurses and clients themselves to care for all minor injuries under the supervision of the Community Health Services staff. At least 1 631 of these are known to have progressed to hospital admission despite this treatment. Trauma remains high on the list and many centres commented that this is attributable to accidents and brawls often related to alcohol intake.

9. ALCOHOLISM

This is a nation-wide problem. The social acceptance of alcohol as a way of life puts Australia among the major drinking nations of the world. Minority depressed socio-economic groups throughout the world follow a pattern of excessive drinking and in Australia the Aborigines fall into this category.

Studies conducted throughout Australia indicate the following factors as contributory to the problem:

land rights
loss of identity and breakdown in cultural practices, particularly among the younger generation
poor housing
lack of employment opportunities
limited skills and educational standards
limited recreational facilities
boredom and lack of social acceptance

Ref. "Alcoholism and Aborigines"—a report by Leary, Dodson, Tipiloura and Buinduk.

The problem must be identified by the community itself. Community involvement and participation in any programme to alleviate the problem is essential for any success. In the past year staff throughout the state have been involved in Health Education programmes on a person to person basis, groups such as schools, community leaders, etc. Individuals and families where Alcoholism has caused health sequaelae are catered for by field staff.

Some communities have of their own accord banned alcohol from their stations, e.g. Strelley, Yandeyarra—and imposed their own penalties for offenders. Recreational activities have been promoted in many areas, e.g. Carnarvon, Koorda Group, where our Aboriginal field assistants have been active, and in Jigalong where an artefact industry has been started.

In East Perth the New Era Aboriginal Foundation has a centre to cater for alcoholics and this is meeting with some success.

In the later part of 1975 a sub-committee of the Aboriginal Affairs Co-ordinating Committee was set up to look into the problem. The need to enlarge the medical facilities with provision of detoxification centres throughout the State, halfway houses, rehabilitation centre, etc, was considered essential. The Alcohol and Drug Authority is already doing much towards this end but their activities are mainly confined to the Metropolitan area at this stage.

10. GAMBLING

As reported previously, this remains a social outlet with few problems in isolated communities where money exchanged is retained in the group of families involved. However, where external agencies operate, e.g. TAB, money is lost with resultant loss of income to the family.

11. NEGLECTED CHILDREN

Staff continue to work with the Community Welfare Department, local G.P.'s and the families themselves to assist in the retaining of family units wherever possible.

A "watching brief" on all "at risk" children was kept in 1975.

12. DENTAL HEALTH

Community Health Services was unable to secure the services of an Itinerant Dentist during 1975. Dental care continued to be provided by the Dental Health Services, Perth Dental Hospital and private dental practitioners, who are increasingly aware of Aboriginal client problems.

The Mobile Dental Clinics provided by the Dental Health Services to which we pay particular tribute to Mr. Alderdice, Mr. Fenn, Mr. McLeod, visited the following areas:

June: Jigalong, Trans Line, Salmon Gums, Norseman, Grass Patch, Northcliffe, Laverton, Wiluna.

July: Dalwallinu, Perenjori, Meekatharra, Sandstone, Cue, Mt. Magnet, Shark Bay, Useless Loop, Kalbarri, Paynes Find.

August: Warburton Mission

October: West Kimberley Stations.

13. ANTE-NATAL CARE

Mr. Kim Akerman, Anthropologist with Community Health Services working in the Kimberley, reports on some problems relating to Aborigines in accepting early ante-natal care:—

"The first and most interesting reason is that many girls appear to be unaware that they are pregnant until the 12th–16th week has elapsed and the more overt physical signs appear. This situation occurs not only among the quasi-traditional Aboriginal population of the Kimberley but also occurs among the more sophisticated town dwellers of the area. In one case history a 20 year old girl, working as a Nursing Aide was 20–24 weeks pregnant before she was made aware of her condition by another staff member. The condition was diagnosed after she had fainted on duty and on regaining consciousness had asked what was wrong with her. A nursing sister at the hospital informed her that she was pregnant and this diagnosis was confirmed by a gynaecological examination. This suggested a possible 24 week pregnancy. Until the girl had fainted she was totally ignorant of her situation.

"Discussing the case with her sometime later she stated that she knew about the cessation of her menstrual cycle at the onset of pregnancy but just had not taken much interest or notice of it and consequently had not realised the implications when it had lapsed for such a long time. Her cycle was not really regular and her menstrual flow was apparently light by European standards.

"A second outstanding case of undetected pregnancy occurred in a community 8 km outside a Kimberley town. In this case, a 19 year old who, although living in a quasi-traditional society, is extremely well integrated, has reached a high standard of education and along with sisters actively maintains her interest in community work. Unlike the previous case this girl had known she was pregnant after 8 weeks.

"The situation was brought to the attention of a Community Health Field Nurse during a weekly clinic when the girl's mother approached the nurse and said that she believed her daughter was pregnant. The mother was anxious that the girl receive full ante-natal assistance. However, between the time of notification by the mother of the situation, and the appointment for an examination a week later, a fine full term baby was delivered to the surprise of everyone in the community. As can be imagined, the gossip through the community ran hot and showed at least one reason why the girl had kept silent on her condition.

"Apparently during a series of drinking sessions in the bush and on the Reserve with males and females from the town and her own community she had intercourse with a number of men, some of whom were technically in an avoidance relationship to her. Her silence assured her safety from kin who would possibly beat her for her general licentiousness and also demand to know the name of the child's father.

"The surprise of the birth removed community concern from the breaking of relationship laws, to concern for the new child's well-being. The girl suffered 'big shame' for a limited period of time after the birth, but had avoided such stress when she was carrying by keeping silent.

"These two cases show the two general categories in which most young girls fall as regard awareness to their condition in early pregnancy. Few girls who keep quiet for 'shame' manage to conceal their situation as

66792/11/77—(6)

JANUARY 1974 – JULY 1976

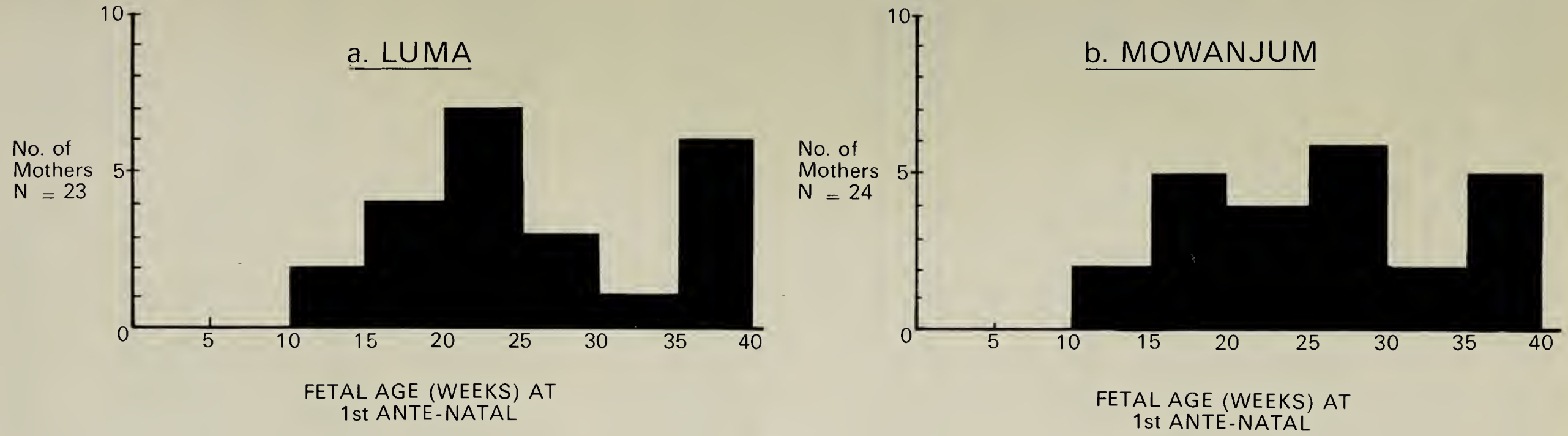


FIG 1

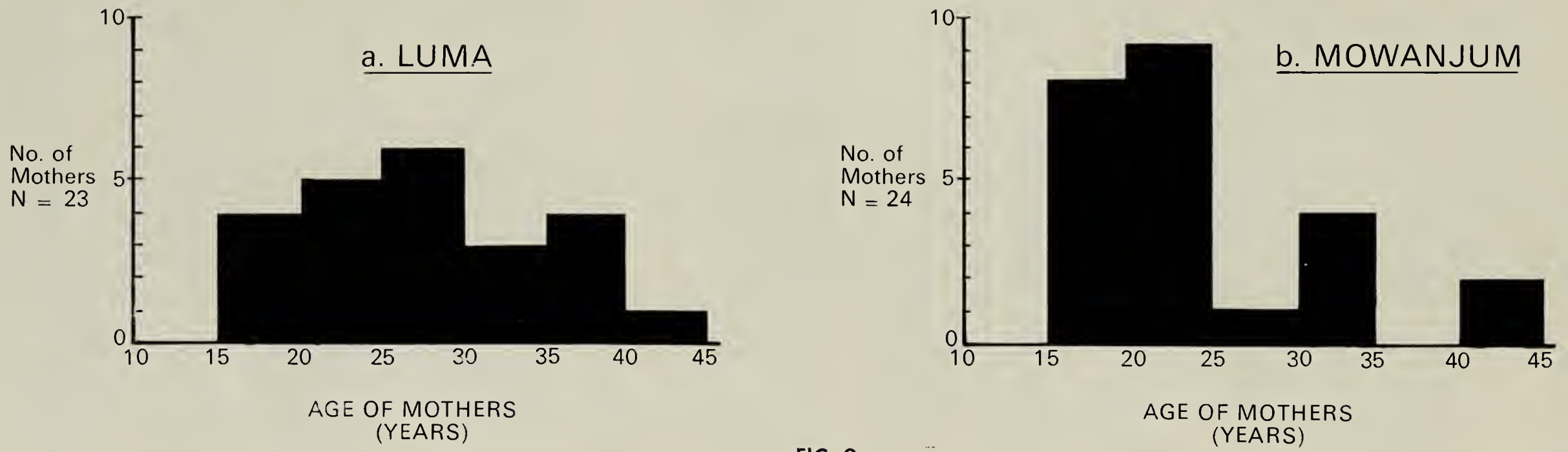


FIG 2

successfully as the latter case. Other girls who are more attune to their bodies than the former are aware of pregnancy at the end of the first five or six weeks.

"The ante-natal records of communities, Luma and Mowanjum, were compared for the period January 1974–July 1976. The communities had a similar number of births, 23 and 24 respectively over the selected period of time.

Appended is a histogram: distribution of foetal ages at 1st ante-natal check, Luma Community
distribution of foetal ages at 1st ante-natal check, Mowanjum Community."

It is encouraging to note that most centres report that serology is now routine practice in their areas. Out of 739 women who attended ante-natal care during the first eight months only 593 attended regularly. 22 deliveries occurred outside hospital either due to precipitate delivery or while on the way to hospital.

Only 427 women attended post natal care. This probably reflects the absence of such clinics, and perhaps the failure of understanding the need for such care on the client's part. Pap smears were performed on 615 women.

14. INFANT MORTALITY

From reports pertaining to deaths of Aboriginal infants infective causes such as meningitis, pneumonia and gastro-enteritis which all relate to the unsatisfactory socio-economic conditions still predominate. However, in four cases congenital abnormalities were noted:—

1 Spina Bifida
1 Werdnig Hoffman Syndrome
1 Maternal Rubella
1 Congenital Syphilis

One neoplastic cause of death and two from accidental/traumatic causes were noted.

15. BREAST FEEDING

Because of greater urbanisation and adoption of Western habits there is an increasing tendency of younger Aboriginal mothers to bottle feed. Other reasons include long stay of premature infants in hospital after discharge of the mother; inability due to breast problems, e.g. abscess and disinterest. Community Health Services policy continues to encourage breast feeding.

16. SIGHT, HEARING AND LIMB CONSERVATION

	1974	1975
Sight:		
Visual acuity tests preformed .... (These include school children North of the 26th parallel where Community Health Services is responsible for school medical services.)	8 206	7 297
Number referred for glasses or specialist treatment	567	490
Hearing:		
Audiometric tests performed	4 621	6 577
Referrals for hearing aides or specialist follow-up	206	490

Drs. Ken Bewley and Graham Innes, Medical Officers in the Kimberley Region, conducted a study to assess the overall percentage of ear disease in 1 215 school children and the extent to which it interfered with auditory function and school performance report:

It was sought to:

1. (a) identify indivudial children with ear disease requiring attention;
   (b) assess the proportion of (a) that could be considered potentially reversible if acoustic and ENT facilities were available. Generally this meant children in the older age group, i.e. 10 years and over.
2. to identify to teachers the individual children who have some hearing disability and gauge the extent of hearing disability in the total school population. This was considered more important in the younger age groups, i.e. under 10 years, in whom medical management does not satisfactorily avoid mild to moderate impairment during formative schooling years.

METHODS: The assessment was performed under screening conditions by medical and nursing personnel with no special education in assessment. They used a CHL standardised audiometer, testing at 500 and 4 000 CPS. 90 per cent of the testing was carried out under good conditions in a quiet room. It was performed by four different operators (where possible known to the children, i.e. Community Health Services' Nurse) under the supervision of the same doctor. Bone conduction was not done as the aim was to screen function rather than diagnose.

CRITERIA: Overall, the level taken as abnormal was 30 Ab at both frequencies, varying to 35 Ab under poorer conditions (i.e. Lombadina where there was a greater background noise).

N.B.: Recognising the limitations, the overall problem was deliberately underestimated by eliminating doubtful cases from the figures and merely noting them for future re-assessment. This mainly applies to the younger children between 5 and 7 years. Unfortunately, "Field" methods such as "Stycar" were not available to complement the audio-assessment.

Generally it was felt that there was a good correlation between the audiometry and normal ear findings on physical examination.

RESULTS:

Hearing

All School Children

	No. Tested	% Total Pop.	No. Audio Defects	% Total Pop.	No. C.S.O.M. Ears
European	329	27·1	20 (4 Bi-lat.)	1·6% (·3%)	3 (1 Bi-lat.)
Aboriginal	886	72·9	133 (52 Bi-lat.)	10·9% (4·2%)	103 (51 Bi-lat.)
Descent	1 215	100	153 (56 Bi-lat.)	12·5% (4·5%)	106 (52 Bi-lat.)

10 Years of Age and Over

	No. Audio Defects	% Total Pop.	No. C.S.O.M. Ears
European	7 (2 Bi-lat.)	·5	2 —
Aboriginal	72 (28 Bi-lat.)	5·9	63 (28 Bi-lat.)
Descent	79 (30 Bi-lat.)	6·5	65 (28 Bi-lat.) 5·3%

Racial Grouping	Total Nos.	Nos. of Normal Audiograms		Nos. Examined with Bilateral Abnormal Audios		Nos. of CSOM Ears		Nos. Examined with Bilateral CSOM	
		Nos.	%	Nos.	%	Nos.	%	Nos.	%
Aboriginal	886	133	15·0	52	5·9	103	11·6	51	5·8
Non-Aboriginal	329	20	6·1	4	1·2	3	0·9	1	0·3
Total	1 215	153	12·6	56	4·6	106	8·7	52	4·3

N.B. (1) Percentages given are rates for that particular racial grouping only.

(2) These audiograms were performed after thorough ear toilets to facilitate clinical examination had been done as indicated. Results are therefore expected to be better than is the normal daily situation.

(3) If the 10 years and over age population are considered to be the suitable operative group, further analysis shows the following:

Racial Grouping	Total All Ages	Abnormal Audios		Bilateral Abnormal Audios		Nos. CSOM Ears		Nos. with BCSOM	
		Nos.	%	Nos.	%	Nos.	%	Nos.	%
Aboriginal	886	72	8·1	28	3·2	63	7·1	28	3·2
Non-Aboriginal	329	7	2·1	2	0·6	2	0·6	0	0
Total	1 215	79	6·5	30	2·5	65	5·4	28	2·3

i.e. The Aboriginal school children population still has a rate of abnormal audiograms of 3·2 per cent even when considering only children 10 years of age and over.

CONCLUSION: There are three clear cut areas of need:—

(1) Adequate ENT Services to deal with the problem, especially in regard to the large number of children over 10 years of age with probable remediable disease (5·3 per cent in this survey).

(2) Associated expert acoustic/psychological facilities to both assess progress with treatment and to advise teachers of individual disabilities in pupils. There is a definite need to help all the personnel working with Aboriginal populations and especially teachers to sort out the nature of "failure" to communicate or learn in a pupil or client. Unfortunately there is the common desperation response of calling it all "Aboriginality", basically because there is not the expert backing to sort out aetiologes such as hearing defect, mental retardation or psychological from language or culture factors. Given this, teacher and nurse etc. can adapt or initiate action to deal with the problem; without support there is just increasing frustration. It is notable that while doing this survey a number of children said to be "too deaf" turned out to be more retarded and *vice versa.*

(3) Having established that the problem is due to impaired hearing, there is the need for wider awareness and utilisation of methods by teachers and specific "deafness" expertise on the education side.

It is to be pointed out that medical management is generally disappointing under 10 years of age. The major hope for long term improvement is in the general raising of hygiene and socio-economic levels. At best, medicine can limit the damage and speed healing. However, this often results in mild to moderate hearing impairment which tends to occupy the formative schooling years. The percentage of children so affected is of the order of 10–19 per cent. Therefore, although Community Health Services is directing a lot of time and effort to train mothers etc. to clean ears etc. the better short term prospects lie in the education area.

Speech: The need for Speech Therapists in country areas especially in the North West, was emphasised in most reports.

Limb Conservation:

1974	1975	
691	813	clients

813 individuals received preventive treatment or advice in relation to their limbs. 96 of these were hospitalised for more intensive care.

Simple physiotherapy procedures were taught to clients and relatives and supervised by our field staff. The excellent co-operation of the Medical Department physiotherapists who reinforced Community Health Services field techniques and provided a specialist service; as well as the RFDS who provided transportation when necessary, cannot go unrecognised.

17. PENSIONERS

1974	1975	
1 534	2 240	clients

2 240 pensioners were cared for by our field staff in 1975. In co-operation with other agencies such as Silver Chain, Meals-on-Wheels, Service organisations and Church bodies, their health and welfare needs were met. Dr. Lefroy of the Extended Care Service continued to provide specialist back-up facilities for the aged and our gratitude is extended to him.

Dr. Psaila Savona, Regional Medical Officer Pilbara, reports:

> "A total of 1 018 visits and re-visits have been made. It is our aim to keep these people in their own home environment for as long as possible. We have also been organising a system whereby even those who are chronic in-patients at the Nursing Home are taken out to the Reserve and allowed to stay there for periods ranging from one day to one week during which time more deserving cases from the Reserve take their place at the Nursing Home in an attempt to correct their nutritional status.
>
> "Special mention should be given to the work being done at Jigalong. Apart from the already mentioned Meals-on-Wheels service, which undoubtedly has helped to upgrade the health and general well-being of the old, a Bath Day once a week for the old, blind and incapacitated has also been organised and the results are often so good that family and friends of those people start taking a greater interest in them and sometimes take over the bath session. In summer, the nursing sisters make sure that the old and incapacitated have plenty of water in the camp so they do not have to walk the quarter of a mile for supplies. By doing so, they are preventing dehydration with consequent problems."

In the Metropolitan suburb of Lockridge a club of pensioners was initiated by Community Health Services and Community Welfare Department where a group of elderly meet and discuss points of interest over tea and see films etc.

18. SCHOOLS

Schools medical examinations were performed North of the 26th parallel on 9 945 children (1974—8 841). Hygiene checks for pediculosis, scabies, impetigo, ringworm etc. were conducted on approximately 18 850 children. These occasions were utilised for informal health education of pupils on care of hair, teeth, skin etc.

In many schools, visits are made on a regular basis and some field nurses are involved in formal health education programmes. It may be necessary in future to allocate a sister to a high school and feeder primary schools and pre-school centres. Because of the small number of medical officers, initial screening may have to be conducted by nurses who should undergo special training.

Close liaison with the School and Child Health Services exists as well as with the Education Department.

19. COMMUNICATION AND ESCORT SECTION

19.1 This section which has three sisters co-ordinates patient movements between the major Metropolitan hospitals and Regional centres. Transportation, accommodation, escort of patients where required, arrangements for follow-up of out-patients and feed back of progress of patient to family are maintained and by regular hospital visitation the patients are kept informed of family news. Delays in repatriation of patients from hospital to home is reduced because of the link up with the RFDS aircraft movement.

Discharges in which this section has been involved—

January–June 1975—572

July–December 1975—341

May 1975 had the highest number of discharges—134

December 1975 had the lowest number of discharges—47

19.2 Field Nurses with Flying Duties

Responsibility for flying duties continued at Derby and commenced at Port Hedland and Wyndham in January 1975 and at Jandakot and Perth in December 1975.

Whilst the work in the Kimberley is orientated to preventive and emergency flights, the role of the nurse in the Pilbara is very much that of escort in emergency evacuations—from inter-regional areas or regional to metropolitan hospitals.

FLIGHT STATISTICS FOR PORT HEDLAND
JANUARY TO DECEMBER 1975

Number of Flights

	Routine	Special	Emergency	Total
January	16	24	4	44
February	12	17	1	30
March	24	22	2	48
April	20	18	4	42
May	31	28	7	66
June	20	13	23	56
July	23	22	21	66
August	21	23	20	64
September	26	8	21	55
October	25	4	22	51
November	21	12	19	52
December	23	10	32	65
	262	201	176	639

Total Number of Flights: 639

Number of Patients

	Evacuated	Return Patients Perth to Port Hedland	Return Patients Local	Transfer of Patients to P.H.D.H. on Clinic Flight
January	41	2	10	8
February	30	3	9	5
March	24	13	31	16
April	33	7	20	18
May	71	11	31	31
June	57	7	24	13
July	66	9	26	26
August	63	5	30	21
September	53	6	19	21
October....	46	8	14	25
November	71	15	22	24
December	42	17	31	40

Total Number of Patients: 1 215 evacuated

Statistics for Kimberley and Perth are not available at this time.

20. STAFF: EDUCATION PROGRAMMES

Orientation programmes for new recruits to the service continued through 1975. A total of 110 field nurses, flying sisters, aides and assistants participated in 21 courses—varying from periods of one week to two weeks.

Six field instructors were appointed on the 15th September, 1975 for a six months trial period. The role of this section is to assist in the development of all field staff to enable them to provide a more effective service to the client.

Of the field nurses whose major, if not only, nursing experience has been in the clinical atmosphere of a hospital and/or other therapeutic agency, only a small proportion have undertaken post-basic education related to working in the community in a preventive role. Help is required in developing a basic understanding of nursing in the community and the underlying sociological and anthropological concepts on which relevant principles are based.

Of the field assistants and aides, some came to the Service with no academic qualifications, but with a very personal knowledge of a cultural and social background which is typical of many of the population which Community Health Services aims to serve. Members of this group also bring a desire to help their people, therefore their needs centre around the acquisition of the necessary knowledge, skill and ability to enable them to assist people in minority and low-socio-economic groups to live lives which are meaningful and satisfying in their own terms.

Aides and Assistants

12 successfully completed a First Aid Course with the Red Cross Society.

2 aides and 4 assistants completed the WAIT Course for Aboriginal Liaison Officers.

Other projects attended by some assistants included visits to the Special Clinic, instruction by Health Supervisors, Family Planning (already discussed) and 2 participated in a film "Help Yourself".

Field Nurses

6 field nurses successfully completed the 12 months Diploma of Community Nursing at the W.A. College of Nursing in June, 1975.

A State Conference, "The Family and Health Team" as the theme, was held during the year.

21. SPECIAL PROGRAMMES

21.1 **Timorese Refugees:** 275 Timorese refugees from Portuguese Timor arrived in Perth at short notice between the 30th August, 1975 and 14th September, 1975. Fortunately, Perth was not the first point of entry into Australia. Preliminary screening was done at Darwin, The Refugees arrived in batches and were admitted to the Graylands Migrant Hostel.

Dr. DeMel, Regional Medical Officer Metropolitan, reports:

Age distribution

Age	No.	Per cent of Total
Below 5 years	47	17
6–15 years	75	27
16–25 years	66	24
26–35 years	36	13
36–45 years	22	8
46–55 years	18	6·5
56–65 years	6	2
Over 65	5	1·8
	275	100

44 per cent of the arrivals were below the age of 15 years.

Sex distribution

Sex	No.	%
M	132	48
F	143	52
Both	275	100

The refugees in the greater majority arrived as family units.

Function of Community Health Services

The primary concern of Community Health Services with these new arrivals was to medically screen them with special attention to those diseases of public health interest, e.g. intestinal parasites, Hansen's disease, malaria, tuberculosis and venereal disease. Diseases of a general medical nature discovered in the course of examination were referred to other agencies, e.g. public hospitals.

In order to effect this plan, it was necessary to form medical teams consisting of a doctor and three nurses.

During the preliminary screening two such teams were deployed so that the examinations were completed as speedily as possible before the next batch arrived. I am glad to report that this procedure worked remarkably smoothly, efficiently and rapidly. I would like to place on record my thanks and appreciation to the nurses and doctors involved for a job well done. It was decided to meet each "plane load" as they arrived in Graylands in case anyone needed urgent medical attention. For this purpose doctors and

nurses were detailed on a roster basis. The planes generally arrived at midnight from Darwin. A sick call was held on arrival. In the afternoon of the following day medical screening commenced. One unsatisfactory feature was that the refugees were processed by other agencies before medical screening could commence. This delay meant that a back log accumulated with succeeding rapid arrivals. In addition to Community Health Services, a team from the State Health Laboratories, Dr. Davidson, Leprologist, Public Health Department and mass radiography by the Tuberculosis Control Branch were also involved. Accommodation and facilities had to be arranged for these different personnel and at times when all the team were working simultaneously, the provision of accommodation and organising flow lines became a major operation, but I feel that considering the difficulties involved, a very good job was done. We were fortunate indeed to obtain the use of the Child Health Centre and two unoccupied flats.

The following procedure was adopted:

1. Identification and a brief medical history recorded by a sister;
2. Medical examination by a Community Health Services doctor;
3. Medical check for Hansen's disease by Dr. Davidson;
4. Laboratory investigation. Blood samples examined for malarial parasite, venereal disease serology as well as routine examinations;
5. Chest x-ray.

Morbidity

The following were the clinical findings—

Trachoma	15 cases
Fungal skin infections	15 cases
Impetigo	6 cases
Scabies	2 cases
Conjunctivitis	5 cases
Otitis media	10 cases
Bronchitis	17 cases
Enlarged spleen	9 cases
Ref. eye clinic	6 cases
Ante-natal	4 cases
Post-natal	1 case
Von Recklinghausen's disease	2 cases

Admission to Hospital

Tuberculosis....	3
Pneumonia	2
Malaria	2
Infant feeding problem	1

Surgical Referrals

Herniorrhaphy	2
Tonsillectomy	1
Biopsy lymph gland, cervical adenopathy	1
Plastic surgery for disfigurement caused by Von Recklinghausen's disease	1

Laboratory Investigations

(See Enteric Diseases Surveillance Report)

Faeces Specimens

188 specimens were examined. 63 were found to contain one or more parasites, approximately one third of those examined. Ascaris was the

most common infestation followed closely by Trichuris. There were 10 cases of Ankylostoma duodenale and 5 cases of Entamoeba histolytica. Treatment was instituted and patients will have follow-up care.

Haematology

Two blood films showed malarial parasites.

16 perople were found to be anaemic.

Routine anti-malarial treatment was instituted for all adults (for one month) and all children for three months.

Assessment

In general, the health of the refugees was good (with the exception of the few cases cited above). There was NO clinical or laboratory evidence to give cause for alarm that we were on the verge of seeing a large scale introduction of exotic diseases into Western Australia by this group of people.

Psychologically, considering the stress and emotional trauma experienced by these refugees in the immediate past, they were surprisingly emotionally stable and well balanced. It is possible that some form of delayed shock reaction may set in later in some cases.

ENTERIC DISEASES SURVEILLANCE REPORT—1975
as supplied by State Health Lab.

Parasitic	Metro	South West	Goldfields	Northern	Pilbara	Kim. West	Kim. East	Timorese Refugees	Total Cases
A. Duodenale	19	6	....	2	11	106	138	41	323
Str. Stercoralis	3	....	....	....	18	26	14	1	62
E. Vermicularis	11	14	....	9	10	2	4	1	51
T. Trichiura	89	5	....	....	3	....	5	59	161
H. Nana	78	75	2	89	49	93	54	....	440
Enta Species	1	1	....	....	1	2	1	6	13
G. Lamblia	173	195	3	153	110	146	103	36	919
A. Lumbricoides	2	....	....	....	....	....	1	53	56
Total	376	296	5	253	202	375	320	197	2 025

ENTERIC DISEASES SURVEILLANCE REPORT—1975

Disease	Metro	South West	Goldfields	Northern	Pilbara	Kim. West	Kim. East	Timor
Shigella	32	144	6	87	80	80	54	5

Disease	Metro	South West	Goldfields	Northern	Pilbara	Kim. West	Kim. East
Samlonella Serotype	107	89	23	91	84	155	109

21.2 Records and Medical Audit

Discussions were held during Conferences in 1975 re POHR's (Problem Orientated Health Records) and the final drafts were agreed in October 1975. Conversions from old record systems were in progress at the turn of the year.

Medical audits continued during the year in the Northern Region. 3 793 audits are now on computer. A restructuring of the format occurred which entailed direct entry of information into the POHR and coded information submitted to the computer for analysis. Because of this modification new programmes had to be written and are now being processed.

Initial results to hand give regional distribution, sex, age and sex-ethnic group distributions. Within the next two months medical data will be analysed.

Currently, of the 3 793 on file 47 per cent of the clients examined have been under 16 years of age—a group that this Service has been aiming at more intensively. See appendix for details.

A summary of comparative analysis of four Metropolitan centres conducted by Dr. H. Leonard is submitted below:

	Belmont	Bentley	Gosnells	Midland
Aboriginal				
No. Clients	331	244	231	191
Full employment	24·6%	37·9%	17·2%	2·3%
Unemployed	61%	44·8%	55·1%	84%
No. people per house	6·0	6·4	8	6·4
No. births	10 (3%)	4 (1·6%)	13 (5·6%)	10 (5·2%)
Inc./Giardia	25·9%	25%	77·7%	29%
H. nana	25·9%	20%	0%	6·4%
Gastro. No cases	8 (11%)	10 (15·6%)	17 (29·3%)	20 (52·6%)
% 0–5 population				
No. Hospital	4	2	5	14
Anaemia				
% 0–5 under 11 grams	33·3%	not known	20%	0
% total population	16·3%	6%	12·5%	7·5%
Treponeal Serology				
% with +ve serology	18·1%	40%	20·8%	18·1%
Alcoholism No.	32	8	1	55
% of adult population	30·4%	10·9%	1·4%	87·3%
Diabetes	1	1	2	7
Family Planning				
% contracepted	35%	36%	36·5%	33·3%
% not contracepted	5%	23%	19·5%	37%
% promoted this year	7–12%	7–13%	7–17%	3–10%
Immunisation				
T.A. & C.D.T.				
% fully immunised	25%	41%	20%	37%
% not immunised	31%	22%	75%	63%
% not known	44%	37%	5%	0
Sabin				
% fully immunised	27%	37%	20%	20%
% not immunised	29%	26%	75%	80%
% not known	44%	37%	5%	0
Malnutrition				
% children measured				
Less than 80% Wt. for age	6·2%	21%	16·6%	11%

COMMUNITY HEALTH SERVICES
STATISTICAL INFORMATION—(SP10)

Location—Western Australia Total persons currently on computer=3 793
Note—All following figures in brackets indicate a percentage of the above total

Sex/Age Distribution

	Male	Female	Total
0— 5	318 (8)	289 (8)	607 (16)
6—15	606 (16)	574 (15)	1 180 (31)
16—18	142 (4)	126 (3)	268 (7)
19—40	258 (7)	406 (11)	664 (18)
41—60	80 (2)	76 (2)	156 (4)
Over 60	34 (1)	16 (0)	50 (1)
Unknown	365 (10)	503 (13)	868 (23)
Total	1 803 (48)	1 990 (52)	3 793 (100)

COMMUNITY HEALTH SERVICES
STATISTICAL INFORMATION—(SP10)

Location—Western Australia Total persons currently on computer=3 793
Note—All following figures in brackets indicate a percentage of the above total

Sex/Racial Group Distribution

	Male	Female	Total
Caucasoid	66 (2)	27 (1)	93 (2)
Negroid	0 (0)	0 (0)	0 (0)
Mongoloid	0 (0)	0 (0)	0 (0)
Australoid	634 (17)	725 (19)	1 359 (36)
Caucasoid-Australoid	1 097 (29)	1 225 (32)	2 322 (61)
Caucasoid-Mongoloid	0 (0)	0 (0)	0 (0)
Caucasoid-Negroid	0 (0)	0 (0)	0 (0)
Negroid-Mongoloid	0 (0)	0 (0)	0 (0)
Negroid-Australoid	0 (0)	0 (0)	0 (0)
Mongoloid-Australoid	0 (0)	0 (0)	0 (0)
Unknown	6 (0)	13 (0)	19 (1)
Total	1 803 (48)	1 990 (52)	3 793 (100)

COMMUNITY HEALTH SERVICES
STATISTICAL INFORMATION (SP20)

Location—Western Australia Total persons currently on computer=3 793
Note—All following figures in brackets indicate a percentage of the above total

Type of Residence Distribution

Location		Class		Equity	
Town	2 618 (69)	Private	631 (17)	Owned	289 (8)
Station	220 (6)	Conventional	1 590 (42)	Purchasing	37 (1)
Community/Tribe	457 (12)	Sub-standard	1 204 (32)	Renting	1 809 (48)
Mission	281 (7)			Boarding	590 (16)
Institution	29 (1)			Visiting	67 (2)
Unknown	188 (5)	Unknown	368 (10)	Unknown	1 001 (26)

Movement Distribution

Local	1 449 (38)
Inter-Regional	1 367 (36)
Interstate	218 (6)
Overseas	8 (0)
Unknown	751 (20)

22. LIAISON

Working in the community implies a multi-disciplinary approach to problems. Throughout this report mention has been made of other agencies with whom close contact has been made—in improving the quality of life.

Our gratitude goes to them as well as to the clients whom we serve. To pick out for special mention would be difficult, but a word of thanks is due to the staff of the Aboriginal Planning Authority and Department of Aboriginal Affairs and its Director, Mr. F. E. Gare, whose constant interest and sound advice is invaluable.

IN CONCLUSION

I would like to thank all the staff of Community Health Services for their efforts during 1975—and a special thanks to those in the Pilbara who faced the effects of Cyclone Joan and put the community needs before self. Finally to Miss M. Reid our inaugural Nursing Supervisor who steered the Service through these past four years—our appreciation.

Appendix VI

Community Health Programme

Lawson J. Holman, J.P., M.B.B.S., F.R.C.S.E., D.P.H., F.A.C.M.A:,
Director General of Public Health

HISTORY

The Community Health Programme is a new undertaking of the Public Health Department.

In July, 1973, the Interim Committee of the National Hospitals and Health Services Commission introduced the Community Health Programme to Australia.

The aim of the National programme was to modify existing concepts and methods in the delivery of health care to Australians by placing special emphasis on community-based preventive health and rehabilitation services as an alternative to the traditional curative services and institutional inpatient care. The Programme aimed to provide at every geographical level "readily accessible, reasonably comprehensive, co-ordinated and efficient health and related welfare services" of high quality.

The achievement of this objective was seen to necessitate provision of:—

(a) services that incorporated the most modern knowledge and techniques available provided by an adequate and appropriate range of medical, nursing and paramedical staff.

(b) readily accessible primary services available equally to all, and a comprehensive range of facilities, back-up resources and supportive services co-ordinated according to function at local, regional and State levels.

(c) continuity and co-ordination of service.

(d) efficient management to support the professional teams and to ensure courteous service and prompt care for the public.

The keynote of preventive health and primary care required the inclusion of such services in the community as:—

(a) preventive, diagnostic and therapeutic services from medical, x-ray, pharmaceutical and laboratory facilities.

(b) complementary activities in the form of day care, domiciliary care, transport, personal welfare services, health education and environmental health activity.

(c) dental services, mental health services, rehabilitation, alcoholism and drug addiction services, family planning, case finding, social intervention and adequate follow-up systems.

The National programme was designed to be responsive to community felt needs and consequently dictated community involvement in decision-making processes at local level.

Western Australia responded to the National challenge by submitting ten initiatives to the National Hospital and Health Services Commission in 1974. These were:—

1. Home Care Services (based on country hospitals) — Health and Medical Departments
2. State-wide Social Work (geriatric services) — Health and Medical Departments
3. Mandurah Health Centre — Health and Medical Departments
4. Busselton Health Centre — Health and Medical Departments
5. Community Psychiatric Services — Mental Health Services
6. Domiciliary Services—M.D.D. — Mental Health Services
7. Clinical Engineering—M.D.D. — Mental Health Services
8. Country Clinic—M.D.D. — Mental Health Services
9. Irrabeena Clinic—M.D.D. — Mental Health Services
10. Pyrton Training Centre — Mental Health Services

These projects were approved with an expected expenditure in 1973/74 of $749 000.

In this initial stage the Commonwealth Government undertook to subsidise the projects to the extent of 100%.

Western Australia has continued to respond to the challenge and the Programme has grown rapidly in this State, displaying increasing involvement and activity of both the community and government. By December 31st, 1975, 54 projects were approved and 80 further submissions were under consideration.

During that time the basis of Commonwealth subsidy was changed to 90 per cent Operating costs and 75 per cent Capital costs.

ADMINISTRATION

The Community Health Programme in Western Australia is administered by the Public Health Department and hence comes within the portfolio of the Hon. Minister for Health.

Within the Department a special committee called the Community Health Programme Committee was set up as the State counterpart to the Community health function of the National Hospital and Health Services Commission.

The specific purpose of the Committee is to consider submissions for projects under the Programme and to recommend policy in regard to the Programme to the Hon. Minister. The general Terms of Reference of the Community Health Programme Committee include the provision of comprehensive community health services of a high standard throughout the State, the initiation of projects, the consideration of submitted projects, the determination of priorities, the co-ordination of projects, the rationalisation of resources including personnel and transport and the evaluation and cost/benefit analysis of approved projects. The Committee consists of:—

Commissioner of Public Health and Medical Services—Chairman
Director, Mental Health Services
Director General of Public Health
Director General of Medical Services
Director of Administration
Director, Child Health Services
Director, Community Health Services
Director, Extended Care Services
Principal Dental Officer
Secretary, Public Health Department
Secretary, Medical Department
Secretary, Mental Health Services
The Accountant
Secretariat

The Committee meets approximately once a month. It is directly responsible to the State Health Services Executive.

Detailed examination of submissions is undertaken by two Panels—a Mental Health Panel consisting of Director, Mental Health Services and Secretary, Mental Health Services which deals with mental health submissions and a Public Health Panel consisting of Director General of Public Health and Secretary, Public Health Department which deals with the remainder.

A Secretariat was established to provide clerical/administrative support to the Committee. It originally comprised of an Administrative Assistant, a Field Liaison Officer and a Shorthand Typist. The Administrative Assistant is the Secretary of the Committee and is responsible for the general administration and implementation of the Programme. The Field Liasion Officer was allotted the task of promoting the Programme among Government Departments, Local Government Authorities, Voluntary Agencies and Community Groups.

Because of the increasing volume of work the Secretariat was increased and on December 31st, 1975, consisted of:—

Secretary/Administrative Assistant
Field Liaison Officer
Graduate Assistant (P.S.B.)
2 Clerks
Shorthand Typist

MECHANISM

All submissions are addressed to the Commissioner of Public Health and Medical Services and pass to the Secretariat where preliminary administrative processing is achieved. The Secretary then passes the submission with any other relevant information to the appropriate Panel which carries out a detailed examination.

Any queries regarding the submission are answered by liaison with the project sponsor. In this the Field Liaison Officer may play a major role. The submission is then presented to the Community Health Programme Committee with the Panel report.

The Community Health Programme Committee may:—

1. return the submission to the Panel for further investigation.
2. recommend approval to the Hon. Minister through State Health Services Executive.
3. recommend non-approval to the Minister through State Health Services Executive.

The deliberations of the Community Health Programme Committee are sent to the State Health Services Executive and then to the Minister along with the original submissions and any recommended alterations and conditions.

If the Minister approves the submissions, State Treasury is then involved regarding any proposed State Government commitment.

All submissions are sent to the National Hospital and Health Services Commission, accompanied by the recommendations of the Minister.

Following processing by the National Hospital and Health Services Commission and the Federal Government, approved projects are subsidised by Federal Grants. Up until December 31st, 1975, approvals have been on an individual project basis and a set of Federal Conditions of approval apply to each grant. Grants are not available for new projects until the Budgets have been passed both in Federal and State Parliaments.

The submitting body is then informed of the result and the project implemented. The establishment of personnel positions attracting Government salary must be approved by the State Public Service Board before being advertised.

Projects Approved to December 31st, 1975

See Appendix A.

54 projects were approved by December 31st, 1975, under the Community Health Programme. These attracted a Federal subsidy of $5 874 702 embodying $2 985 378 in Capital allocations and $2 889 324 in Operating allocations.

The following Table indicates the range of sponsoring agencies.

Sponsor	No. of Projects
Mental Health Services	25
Public Health Department	18
Medical Department	3
Women's Action Group	2
Health Education Council	2
Fremantle City Council	1
Richmond Fellowship	1
Arthritis and Rheumatism Foundation of W.A.	1
Alcohol and Drug Authority	1
Total	54

MENTAL HEALTH SERVICES

The 25 projects of Mental Health Services supported by the Programme are as follows: (extract from Mental Health Services Annual Report, 1975.)

Community Psychiatric Services

The Division was established in 1974 and the primary aim is the selection of hostels for rehabilitation of selected patients, and for activation and socialisation. These Hostels are located throughout the metropolitan area and although a number of the residents attend the Industrial Rehabilitation Unit, a significant group were unable to participate in this form of rehabilitation. The Division is now well established and is attempting to provide active social programmes.

Legislation has been passed by Parliament and when proclaimed it is anticipated that further improvements in standards of care and activation will be effected.

Domiciliary Service

This Unit was established with the objective of helping parents within their own homes to train the handicapped child in independence. After an initial pilot programme proved successful, funds were provided in 1975/76 to expand the service. Apart from the obvious advantages of home training involving the family as an entity, there are secondary benefits by reducing the demands for Departmental residential accommodation.

Clinical Engineering

Special items of equipment are manufactured within the Department and issued on loan for use by intellectually and profoundly handicapped residents in the community. It is proposed to extend this service to all Mental Health Services Units.

Country Clinical Teams

Many intellectually handicapped persons are living in country areas and towns throughout the State. It is often not possible or practical for parents to take advantage of the comprehensive services available in the Metropolitan area. Multi-disciplinary teams from the Irrabeena Centre (the principal diagnostic and assessment centre in Perth) visit most areas of the State to conduct assessment sessions and organise training programmes at a local level. Many such centres have an active Branch of the Slow Learning Children's Group who operate day activity centres and hostels.

Irrabeena Clinic

The Community Health programme provided financial assistance to cover the appointment of some additional staff members to the Clinic. As mentioned above, Irrabeena is the principal diagnostic and assessment centre for mentally retarded persons in Western Australia. This Centre works in close liaison with Princess Margaret Hospital for Children, King Edward Hospital for Women, University of Western Australia, other Tertiary Education Institutions and the Child Health Services. It is a non-residential Unit providing a specialised service.

Pyrton Day Activity Centre

There is a constant demand for day centre facilities for the intellectually handicapped. Many of these centres are operated by the Slow Learning Children's Group. The Centre at Pyrton was established as part of the Division's contribution towards meeting this demand. Funds were provided to cover the appointment of additional Social Trainers. The Centre has day facilities for 35 children who live at home and who attend on a daily basis, Monday to Friday.

Community Development Centre

This Unit is Mental Health Services mental health education service. The facilities are available to all approved organisations who are active in health education and other related fields of community service. The Centre conducts special courses in human relationships, provides forums for discussions on social problems affecting the health and quality of life of the community in general. The Community Health Programme has contributed some funds to permit expansion of the service.

Out-Patient—Clinics: Havelock, Fremantle, Bentley, Armadale and Swan

Mental Health Services established its first Out-Patient Clinic (Havelock) outside the hospital environment in 1956. This type of service has been well received and has resulted in considerable expansion, particularly in the past five years. New Clinics have been constructed in Fremantle, Bentley, Armadale and Swan, and the activities conducted from the clinics readily met the principles which are the basis of the Community Health Programme. Funds have been received for capital works and for operating costs at the majority of the clinics mentioned above. Each clinic is staffed by specialist psychiatrists, clinical psychologists, occupational therapists, social workers and support welfare staff. Day and evening sessions are available and facilities exist for child minding services.

Graduate Welfare Officers—Graduate Assistant, M.D.D.

The salaries for three staff are funded under the programme. The Mental Deficiency Division has used graduates to assist Social Workers in assessment centres, other units and in community activities. This category has contributed towards meeting some of the deficiencies due to non availability of qualified social workers. The Graduate Assistant is responsible for supervision of the Division's Statistical Section, which is involved in providing data to assist future planning of services for the mentally retarded in Western Australia.

Brighton Hostel and Hove Day Centre

The programme for the care and training of the intellectually handicapped places considerable emphasis on independence training leading towards eventual placement of these persons in a normal residential environment. Part of the programme requires an increasing provision of residential hostels situated as far as possible within normal suburban locations. Brighton Hostel has been constructed with assistance of funds from the Community Health Programme and the Hostel will provide accommodation for 36 socially acceptable persons of both sexes. The residents will attend outside employment or other training facilities away from the site.

The Hove Centre consists of two 35 place Units. One Unit will cater for adults who require day activity centre training and who live at home. The other Unit will provide special assessment and therapy programmes for children and adults who are both mentally retarded and physically handicapped. Both units are non-residential.

Research and Review Psychologist

Although funds were approved for the above appointment, it has not been possible to recruit a suitable officer. The duties attached to the position will involve establishing methods of evaluation of community orientated services.

Co-ordinator—Training in Community Psychology

Funds were approved for this appointment, however it has not been possible to recruit a suitable officer. The Co-ordinator will programme and co-ordinate training and education of professional, sub professional and community agencies.

General

Milford Hostel—Bassendean (Capital funding only)

The building was completed in 1975.

Accommodation is provided for 24 socially acceptable male and female intellectually handicapped persons. The unit forms a part of the training programme facilities of the Mental Deficiency Division. Residents attend sheltered workshops or outside employment. Funds have also been provided for the purchase of other suitable buildings.

Dorset Hostel—Armadale (Capital funding only)

Funds were allocated to modify and extend the buildings to provide accommodation for a total of 32 profoundly handicapped persons.

The work was completed during 1974/75 financial year.

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Cromane Hostel—Bayswater (Capital funding only)

The above building was purchased in 1974.

Accommodation is provided for 20 severely retarded children. The hostel provides training and social activities, so that residents can progress to another hostel where their individual skills may be further developed.

Grosvenor Hostel

This project includes Capital Expenditure only as not yet operational.

Graylands—Apparel Shop and Welfare Centre

This new building was completed in 1975.

The design and furnishings of the building were arranged in consultation with the Combined Hospitals Welfare Committee. The facilities provide for an apparel shop where patients are outfitted at the time of discharge. The Welfare Centre conducts meetings and counselling for patients and ex-patients.

School of Nursing—Swanbourne Hospital

The Commonwealth Government provided a proportion of the funds for the construction of extensions to the school which was completed in 1975. The demands of community services for qualified Mental Health Nurses necessitated increasing training facilities at the School of Nursing Studies.

Voluntary Agencies

Dorset Hostel—Armadale: New Bus

The local Jaycees Group provided part of the funds for the purchase of a new bus. The Commonwealth Government provided for the balance.

Recovery/Grow Organisation

This organisation has been funded by the Commonwealth Government for the past three years under the conditions of the Community Health Programme.

The balance of funds are provided by the organisation through fund raising activities and donations.

Recovery/Grow is involved with self help programmes for persons requiring counselling and assistance with every day problems and in addition is making a worthwhile contribution to the rehabilitation and re-socialisation of persons who have suffered from stress and psychiatric illness. At present there are 25 groups functioning throughout Western Australia.

PUBLIC HEALTH DEPARTMENT

The following is a short description of the 18 Public Health Department projects supported by the Programme.

Mandurah Health Centre

Located in Ormsby Terrace, in the heart of the holiday/retirement township of Mandurah, this Type III Health Centre accommodates a private medical group practice, child health facilities, community health and domiciliary nursing services, social work practice, occupational therapy, health education instruction. Visiting services, such as a mental health team and eye specialist, regularly attend the Centre. The Centre provides facilities for physiotherapy and Meals on Wheels services. Group activities include pottery, basket making, arts and crafts and yoga classes.

Busselton Health Centre

A Type III facility serving a picturesque holiday-fishing town on the south-west coast. Services based here have been carefully selected on the basis of expressed community needs and include a private medical group practice, a private dental practice, child health, community health and domiciliary nursing services, social work, physiotherapy, health education and visiting specialist health and welfare services. Group activities include arts and crafts, yoga and various other health associated activities.

Geraldton Health Centre

Construction is due to commence shortly on the Type IV Centre located on the Geraldton Regional Hospital site. It is envisaged that a number of private medical group practices will operate from the Centre, as will a private dental practice. Ancillary services will include child health, community health and domiciliary nursing services, social work practice and health education instruction. It is also envisaged that specialists will make regular visits to the Centre. It is proposed that Day Care facilities will be incorporated in the Centre to provide activities for the aged and handicapped.

South Hedland Health Centre

The proposed South Hedland Centre is a Type IV facility due to be constructed shortly in close proximity to a large State Housing Commission development. This Centre has been designed to meet the expressed needs of the community and will accommodate a medical practice, social work practice, infant health, community health and domiciliary services. Visiting specialist services will be organised on a regular basis.

Handicapped Children's Assessment Centre

Located in Rheola Street, West Perth, this service is intended to meet a pressing need in the community for expertise in the field of Child Health. This will provide comprehensive facilities for the assessment, treatment and training of handicapped children, as well as for the training of medical practitioners in child assessment and child health. The service is presently operating on an interim basis and planning of a new building (estimated cost $460 000) is proceeding.

Teaching Health Centre

This Type IV facility is due to be constructed during 1976/77 and has been designed to serve a dual purpose, i.e. the delivery of health care to the community, as well as the training, through service, of medical students. The health facilities to be offered include a private medical practice, social work, community health and child health nursing services, health education, physiotherapy and clinical psychology.

Lockridge Health Centre

Situated in a high density, relatively low-income State Housing Commission locale, this Health Centre will serve an estimated population of 10 000. A high proportion of single-parent families reside in the area, which has for some time now demonstrated a need for improved health and related services. The Centre will initially be housed in a State Housing Commission building which forms part of the Lockridge Shopping Centre and will provide a Social Work practice, community health nursing and occupational therapy and a range of visiting services will be introduced as the need for these is demonstrated. Group activities, like arts and crafts, have also been planned for the Centre.

Community Health Sisters

This project has been introduced to upgrade the health of all Western Australians, by a process of education, with a special emphasis on the lower socio-economic groups. Areas covered range from the Metropolitan suburbs of Balga and Lockridge to new communities like Mount Newman. Each nurse will normally be related to a client population in excess of 1 000 and where a Health Centre is located in the area, the Community Health Nurse will operate from this facility.

Community Chest Service

This project is designed to provide a personalized service for patients suffering from chronic lung conditions requiring co-ordinated and on-going treatment and care. It is envisaged that this facility will initially service the Metropolitan area and possibly later expand to the larger country centres.

Community Health Programme Secretariat

The Secretariat is responsible for the processing of all submissions for funding under the Community Health Programme, and the co-ordination of the administration procedures associated with the Programme.

Karratha Health Centre

Karratha is a mining town approximately 1 500 kilometres north from Perth, with an anticipated population of 30 000. Health facilities in the town are scarce, and the closest hospital is at Dampier, some 22 kilometres away. Construction work will commence soon and services will include a medical general practice, social work practice, community health services, physiotherapy, Flying Doctor radio base and visiting specialist services on a regular basis.

Manning Health Centre

Manning is a suburb with significant State Housing Commission accommodation now being developed at Karawara. The project provides for the funding of a Research Team to investigate the need for a Health Centre in the district. This survey is expected to take six months.

Lake Varley Health Centre

Lake Varley is a rural community on the eastern fringe of the south west agricultural region. It has an estimated population of 400 and the nearest medical facilities are some 140 kilometres away. A Type I Health Centre has been designed for this town; it is a transportable design, will be built in Perth and road-freighted to the site. Facilities will include community health nursing service, visiting flying doctor and specialist services. Community involvement has been most encouraging—an airstrip has been built by the local residents to allow the Royal Flying Doctor Service to service the town. The centre will be staffed on a roster basis by qualified nurses already resident in the area.

Aerial Specialist Services

This project is designed as a trial project to provide the remote areas of the State with specialist medical and health services on a regular basis.

Southwell, Koondoola and Queens Park Child Health Complexes

These three facilities are designed to provide medical and health facilities to pre-primary age children in the Metropolitan area. Each Centre will offer the services of a Nurse, a Social Worker, a Speech Therapist and Medical general practice on a sessional basis.

Medical Student Attachments

Developed by representatives of the Australasian Medical Students' Association, in consultation with staff of the Faculty of Medicine University of W.A., this project provides opportunities for medical students to be attached to general practitioners in the rural and outlying areas. The intention is to broaden their medical education, assist general practitioners in the delivery of health care, and keep the general practitioners informed of new advances in the field of Medicine.

MEDICAL DEPARTMENT

The Medical Department sponsored 3 projects for support by the Programme.

Home Care Services

This project provides for the delivery of extended care services to communities in selected areas of the State. Service includes home nursing, domestic and handyman help, operating from various country hospitals.

Of the twenty six Centres approved, twenty two are fully or partially operational. The home Care Services at Quairading, Carnarvon, Dalwallinu and Williams are expected to commence soon.

Centres are:

Albany	Katanning
Augusta	Kellerberrin
Boyup Brook	Kondinin
Bruce Rock	Manjimup
Carnarvon	Margaret River

Corrigin	Merredin
Dalwallinu	Narrogin
Denmark	Northampton
Donnybrook	Pinjarra
Esperance	Quairading
Geraldton	Wagin
Gnowangerup	Williams
Kalgoorlie	York

Social Work—Geriatrics

A Social Worker is employed to assist in the overall development of the State Extended Care Services. The Social Worker is involved with the Assessment and follow-up service to aged persons within their own home or environment.

This Service for the aged emphasises the treatment of people in their own home.

Medical Specialist in Extended Care

This Project is proposed to provide a specialist physician to assist in consulting with medical practitioners in all parts of the State regarding geriatric patients needing care for continuing disabilities.

WOMEN'S ACTION GROUP

The Women's Action Group sponsored 2 projects supported by the Programme.

Nardine Women's Refuge

This project provides emergency accommodation for women and children in need and also provides emotional and physical assistance when required. It has been functioning under the Community Health Programme since August, 1975, during which time there have been approximately 80 women and 140 children accommodated.

Women's Health Centre

This Centre provides a day and night Centre for the problems of women.

It incorporates individualised social and medical services, group activities in and out of the Centre, and liaison with other groups and agencies in the community.

The Night Centre provides help for the emotional and practical support to women telephoning or writing for other reasons, such as physical violence, rape, depression and homelessness.

HEALTH EDUCATION COUNCIL

The Health Education Council sponsored 2 projects supported by the Programme.

Health Education Resource Centres—Perth and Fremantle

These are resource Centres for the dissemination of Health Education information, guidance and organisation. Resources available include both instructional material, as well as health educators.

The staff employed includes Health Education Officers, Journalists, Maintenance Officers, Video/Film Specialists and Administrative Staff.

OTHER SPONSORS—(4 Projects)

Fremantle City Council—Warrawee Women's Refuge

This facility is located in Fremantle and provides emergency accommodation for women and children in need.

The purpose is to provide short-term accommodation for women and their children who at the time are homeless, generally caused by domestic problems.

Warrawee is administered by the Fremantle City Council, with the Social Worker responsible for day to day supervision.

Richmond Fellowship

This project provides for the funding of a half-way house for emotionally disturbed women.

Arthritis and Rheumatism Foundation

This service provides a nursing and advisory service for the Rheumatism and Arthritis Foundation Field Nurses who have been appointed to serve the Metropolitan and South West Areas of the State.

It will help achieve additional training and treatment facilities that will promote management of rheumatic diseases for all patients in Western Australia.

It will create a means for effective communication between metropolitan hospitals and community practice. The service will co-operate with all health services in the community, in an effort to reduce the necessity for hospitalization and to improve the rehabilitation of arthritic patients. Very close liaison will be maintained with Community Health Services Branch of the Public Health Department.

Alcohol and Drug Authority—Carrellis Centre

This project provides funds for the assessment, treatment and rehabilitation of alcoholics and drug addicts in Western Australia. It is used for the detoxification of patients and to provide an effective team for the rehabilitation of alcoholics and drug addicts.

The above projects demonstrate the wide range of functions and services supported to date by the Community Health Programme. The emphasis on rural provision should be particularly noted as Western Australians resident outside of the Metropolitan Area and the Major Country Centres tend to have less access to comprehensive services than their urban counterparts.

The Programme to date has achieved much towards improving the overall situation. Forward planning has led to the adoption by the Committee of a model set of guidelines for the establishment of a grid system of facilities throughout the State. The actual location of each facility will depend on the expressed wishes of local residents and their stated requirements, an assessment of their needs and the prevalence of existing facilities, political approval and the availability of funds. The model is based on four grades or types of Community Health Centres as follows:—

TYPE I

A Centre of this size would cater for the needs of up to 100 people and would offer:—

(a) primary contact and emergency aid.

(b) good communications with, and transportation to, resource centres.

(c) voluntary or part-time staff, as well as visiting staff from Government and voluntary agencies.

TYPE II

These are based on existing facilities owned, used or connected with this Department, perhaps with minor alterations and additions. This type of facility would meet the needs of up to 1 000 people and would provide:—

(a) primary contact with full-time staff.

(b) emergency staff.

(c) good communications and transport, as with Type I.

(d) a base for a sufficient number of general field staff to service approximately 1 000 people.

(e) a base for certain allied professional activities, as well as close contact with a family medical practitioner.

(f) a venue for medico-social activities for 1 000 people.

(g) visiting personnel, as with Type I.

TYPE III

A centre of this size would either be constructed or leased and would serve up to 10 000 people, depending on its location. It would provide:—

(a) primary contact, emergency aid, communications and transport, as before.

(b) a base for the supervisory staff responsible for the operation of surrounding Type I and Type II centres.
(c) medical practitioner services.
(d) a base for visiting, part-time and full-time specialists.
(e) allied professional facilities and staff.
(f) increased medico-social facilities and staff.
(g) dental (if possible) and pharmaceutical facilities.
(h) support facilities such as x-ray equipment, emergency treatment rooms, etc.
(i) facilities for voluntary organisations.
(j) various other facilities, such as a day care centre, rooms for welfare staff, etc.

TYPE IV

It is envisaged that this type of centre will be large enough to serve 100 000 people and as such can only be justified where:—

(a) it is used for the training of health workers.
(b) the necessity arises for a Regional Headquarters.

It is hoped to establish a network of Type I Centres throughout the State, with an appropriate number of the other three types providing support services. It is also hoped that as the community becomes more aware of the potentiality inherent in the Community Health Programme, the extent of their involvement and enthusiasm will increase.

There is growing community interest in the Programme. Local Government Authorities have sought the advice of the Secretariat in regard to various types of projects, ranging from a Women's Refuge at Bentley to a Type I Community Health Centre at Lake Varley. The latter is exemplary: the local community constructed an airstrip (largely at its own expense) in addition to providing the staff for the project. Private agencies and community pressure groups have also sought assistance with submissions for funding under the Programme, and this interest is welcomed by the Committee. The Programme is essentially a community-based concept and community involvement is vital to its existence. Hence Health Centres established under the Programme offer the community such activities as sewing classes, art and pottery classes, film shows, etc. Many of these activities revolve around health care, but the main aim is to encourage participation by the public, to encourage the community to look on the Centre as their Centre and for the community to develop positive attitudes to health.

Communities where Health Centres are established are assured of a continuing voice in the management and progress of each centre through the channel of the Centre Advisory Committee. Each Centre has an advisory committee composed of representatives from the community, the Local Government Authority and from the health workers in the Centre itself. The advisory committee is cognisant with the administrative details of the Centre and offers advice to the Department regarding all matters affecting the Centre. In many cases local problems which come before the Department are referred to the advisory committee for resolution. The advisory committees also undertake local promotion of the Centre and the furtherance of its aims to improve the health of the Community. To this end, seminars, discussions, lectures, films and group meetings are arranged by the committees as well as promotion of other groups and sub-committees to arrange such matters as adult care rosters for play area etc.

The Programme is not committed to the establishment of Health Centres alone. Any proposal with a health bias is eligible for funding. Certain aspects of welfare are also eligible. A prime example is the Women's Refuge, an emergency shelter for distressed women. Two such projects have already been funded under the Programme.

PROGRAMME EVALUATION

Evaluation of health projects is a very complex matter. There is a general consensus of opinion that evaluation is essential as an integral part of management. In general business cost/profit analysis is relatively easy to compute and because general business managers are so facile in the production of balance sheets, administrators in health feel considerable pressure to emulate them.

The underlying problem in evaluation of health projects lies in the measurement of the benefits produced. Although a definition of health is given by the World Health Organisation, i.e. "Health is a state of physical and mental well being and not the mere absence of disease", it can be seen that health remains an entity very difficult to define in measurable terms. Many of the benefits and effects of a competent health service are abstract, intangible or of a subjective nature. Further, people are not a homogeneous mass so that parameters applicable to one group may not be applied to another. Also the expectations of health in any community are ever varying so that as one expectation is met, another more lofty goal arises in its place.

Certain basic health measurements have been possible since the time of the Great Plague, i.e. vital statistics and other basic measurements have since been added. A great number of such measurements and rates are taken and calculated each year by the Health Departments in Western Australia and are published annually in the appropriate reports of Departmental Heads. One of the most significant of these measurements is the Hospital Morbidity Statistics which show the number of cases of any disease admitted to any hospital in the State and the number of bed-days used thereby. Besides annual material there is a vast collection and monitoring of on-going data which allows health administrators to gauge the health of the community as a whole.

But all these methods of assessment are crude. They provide no indication of benefits to individuals either tangible or intangible, nor do they provide any indication of the effectiveness of individual services. The provision of such discreet evaluation is fraught with difficulty. Services are so interlocked and overlapping that the benefit contributed by each module to an individual person is virtually impossible to assess with accuracy. Further total health is not the summation of effectiveness of health services alone. Many other factors play a part. Thus health is also dependent on housing, education, job opportunity, cultural background, etc. etc. It is impractical to attempt separation of these factors as measurable quanta.

The cost in men, money, machinery and time to provide detailed analysis of effectiveness would be very great indeed and, even if such a venture was undertaken, could not provide measurement of intangible benefits. Finally the privacy of individuals would be severely compromised and the popularity of some services could be jeopardised by the resulting bureaucracy. This Department is very conscious of possible damage to the effectiveness of existing services by such a change in public response. The Public Health Department believes that evaluation should be considered in four categories:—

1. **Process Evaluation** which supplies information of achievement of goals for least cost. This is a pure business management exercise which in reality provides an answer to the question—"Whatever the service is doing—can it be done for less?"

2. **Goal Evaluation.** Targets and goals can be set in measurable terms in certain specific health problems. As an example a specific target could be set to achieve zero incidence of tetanus in a Region or the State by attempting 100 per cent immune protection to all susceptible persons.
   Both the incidence of the disease and the number of immunisations given could be measured and hence the effectiveness of the service in relation to this target ascertained.

3. **Outcome Evaluation.** This supplies information on the overall effectiveness of each service. The inherent difficulties in such evaluation have been previously stated.

4. **Evaluation of Needs and Wants.** This is closely allied to forward planning and decision on priorities. The Department supports the view that the determination of what remains to be done is of primary importance. If the Community Health Programme had men, money and material available for more evaluation, this is the area where such resources should be expended. Once the most pressing future needs are determined the logical process follows where decision is made if any existing service could satisfy those needs without increase in budget.

Rationalisation and maximization of existing services with such a goal compels the usage of process and outcome evaluation.

The Community Health Programme Committee, its panels and Secretariat are continually engaged in this exercise as part of their internal mechanisms, but it is not seen as a separate entity but as an integral part of their working systems.

Where budgets are limited, as they must be, the determination of priorities in relation to needs becomes of paramount importance.

Radical change in regard to existing health services is not a sought goal.

The replacement of one health function by another may have deleterious effects which remain occult for long periods of time. Tuning up the engine of health is a delicate and skilled manoeuvre not to be lightly undertaken.

In general where it is practical and does not impose extra cost, evaluation should be built into projects. However, the effectiveness of such evaluation needs in itself to be evaluated. In the light of hard facts it is questionable that enough persons sufficiently skilled to evaluate the evaluations are available and if they were, the priority use of them would be in assessment of priority of needs and maximization of existing resources.

FINANCE

Appendix B is a histogram showing Annual Allocation Approvals in terms of Commonwealth, State and Total Funding.

Appendix C shows the financial position of the Programme as at December 31st, 1975.

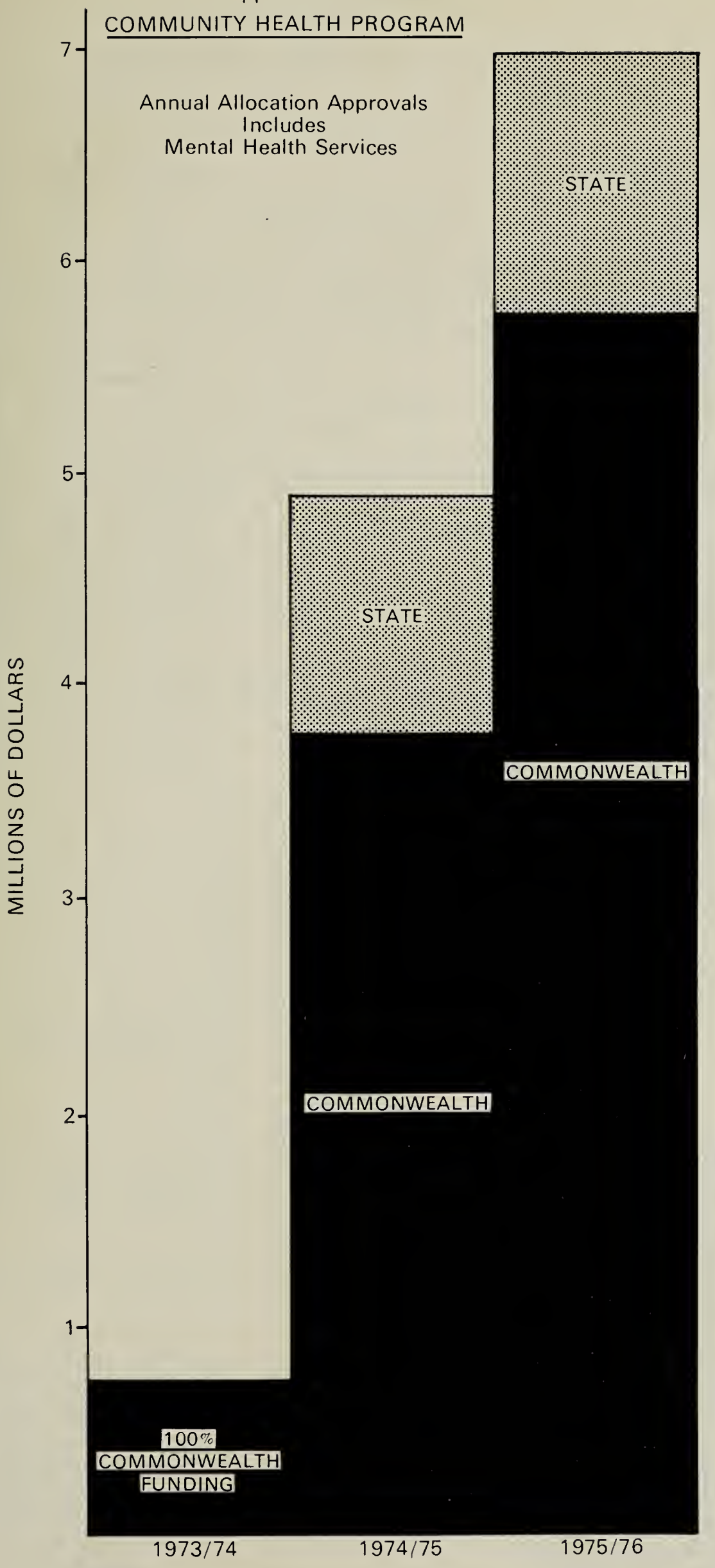
APPENDIX A

PROJECT SPONSORSHIP

SPONSOR	PROJECT
Mental Health Services	Community Psychiatric Services Domiciliary Services Clinical Engineering Country Clinical Teams Irrabeena Clinic Pyrton Day Activity Centre Community Development Centre Out-Patient Clinics: Havelock Fremantle Bentley Armadale Swan Graduate Welfare Officers Graduate Assistant Brighton Hostel and Hove Day Centre Research and Review Psychologist Co-ordinator—Training in Community Psychology Milford Hostel—Bassendean Dorset Hostel—Armadale Cromane Hostel—Bayswater Grosvenor Hostel Graylands—Apparel Shop and Welfare Centre School of Nursing—Swanbourne Hospital Dorset Hostel—New Bus Recovery/Grow Organisation
Public Health Department	Mandurah Health Centre Busselton Health Centre Geraldton Health Centre South Hedland Health Centre Handicapped Children's Assessment Centre Teaching Health Centre Lockridge Health Centre Community Health Sisters Community Chest Service Community Health Programme Secretariat Karratha Health Centre Manning Health Centre Lake Varley Health Centre Aerial Specialist Services Child Health Complex— Southwell Koondoola Queens Park Medical Student Attachments
Medical Department	Home Care Services Social Work—Geriatrics Medical Specialist in Extended Care
Women's Action Group	Nardine Women's Refuge Women's Health Centre
Health Education Council	Health Education Resource Centres— Perth Fremantle
Others	Fremantle City Council—Warrawee Women's Refuge Richmond Fellowship Arthritis and Rheumatism Foundation Alcohol and Drug Authority—Carrellis Centre

Appendix B

COMMUNITY HEALTH PROGRAM



	Project	Approval 1975/76 State	Approval 1975/76 Federal	Approval 1975/76 Total	Actual Expenditure to 31/12/75
		$	$	$	$
W. 5	Community Psychiatric Health Centre	19 595	169 627	189 222	95 721
W. 6	Domiciliary Care Service	30 736	287 670	318 406	45 058
W. 7	Clinical Engineering	1 237	9 105	10 342	4 311
W. 8	Country Clinics	2 747	27 470	30 217	7 601
W. 9	Irrabeena Clinic	5 142	51 417	56 559	27 248
W. 10	Pyrton Training Centre	1 198	11 979	13 177	7 867
W. 14	Community Development Centre	1 452	14 523	15 975	4 587
W. 21	Havelock Clinic	1 265	12 652	13 917	908
W. 22	Fremantle Clinic	2 384	20 574	22 958	5 792
W. 101	Bentley Clinic	6 536	65 360	71 896	21 183
W. 111	Armadale Clinic	21 248	149 683	170 931	382
W. 112	Swan Clinic	16 172	129 377	145 549	216
W. 113	Graduate Welfare Officer	2 187	21 870	24 057	16 644
W. 114	Graduate Assistant	675	6 750	7 425	4 118
MV. 1	"Grow", W.A.	4 564	41 138	45 702	....
W. 3	Mandurah Health Centre	15 972	168 716	184 688	166 862
W. 4	Busselton Health Centre	15 429	142 476	157 905	75 507
W. 11	Geraldton Health Centre	146 625	586 500	733 125	57
W. 12	South Hedland Health Centre	127 500	510 000	637 500	122
W. 13	Handicapped Children's Assessment Centre	49 805	216 210	266 015	16 211
W. 17	Teaching Health Centre	91 875	367 500	459 375	....
W. 24	Lockridge Health Centre	12 423	105 108	117 531	825
W. 27	Community Health Sisters	50 593	312 350	362 943	....
W. 28	Respiratory Diseases Programme	729	7 294	8 023	710
W. 29	Community Health Programme Secretariat	6 462	60 119	66 581	6 605
W. 30	Medical Student Attachments	535	5 350	5 885	2 076
W. 31	Karratha Health Centre	50 000	200 000	250 000	....
W. 32	Manning Community Health Centre	2 295	22 950	25 245	....
W. 37	Aerial Specialist Services	22 680	145 800	168 480	....
W. 38	Lake Varley Health Centre	6 732	33 567	40 299	....
W. 40	Southwell Child Health Complex	2 791	26 781	29 572	....
W. 41	Koondoola Child Health Complex	2 791	26 781	29 572	....
W. 42	Queens Park Child Health Complex	2 791	26 781	29 572	....

APPENDIX C

	Project	Approval 1975/76 State	Approval 1975/76 Federal	Approval 1975/76 Total	Actual Expenditure to 31/12/75
		$	$	$	$
MEDICAL DEPARTMENT					
W. 1	Home Care Services	20 789	168 960	189 749	46 001
W. 2	Social Worker—Geriatrics	1 260	12 600	13 860	4 696
W. 20	Medical Specialists in Extended Care	2 264	22 635	24 899	....
WOMEN'S ACTION GROUP					
W. 16	Women's Health Centre	11 010	102 225	113 235	65 893
W. 25 (A)	Nardine Women's Refuge	9 910	76 600	86 510	50 114
HEALTH EDUCATION COUNCIL					
W. 23 (A)	Perth	14 749	105 975	120 724	26 241
W. 23 (B)	Fremantle	3 779	34 530	38 309	19 167
FREMANTLE CITY COUNCIL					
W. 25 (B)	Warrawee	4 814	46 053	50 867	18 931
RICHMOND FELLOWSHIP					
W. 18	Richmond Fellowship	16 313	65 250	81 653	81 563
ARTHRITIS AND RHEUMATISM FOUNDATION					
W. 26	Arthritis Community Service	10 362	41 448	51 810	14
ALCOHOL AND DRUG AUTHORITY					
W. 15	Alcohol and Drug Authority	50 724	389 115	439 839	157 243

Appendix VII

Child Health Services

R. W. Roberts, M.B., B.S., F.R.A.C.G.P., D.C.H.
Director

INTRODUCTION

1975 has seen the bringing to fruition of plans initiated in 1974 particularly in the Federal Government funded projects. This has meant much activity in recruiting and training of new staff and the problems involved with accommodation and supervision. However, we are confident that our new projects are worthwhile and appreciated by the children and families whom we serve.

To make way for the expansion in assessment services in the child health field and to improve communication with other Public Health Services, the medical and nursing administration along with the School Health sector has been re-located in Salvatori House, 35 Outram Street, West Perth. This has led to some upsets in communication but steps are being taken to improve this situation. The main areas of work remain the same:

1. **Support and Counselling**—mainly by Child Health Nurses in the Centres and Correspondence Section, but increasingly so by the Nurses attached to schools.
2. **Education for Parenthood**—by personal contact, in expectant parent classes, in Teachers Colleges, and in both Primary and Secondary Schools.
3. **Health Screening**—one of the most time-consuming but vital aspects of work in all sections.
4. **Assessment**—a rapidly expanding sector of work in the service.

The upgrading of these areas of work has been in both quantity and quality, with increasing emphasis on rural and disadvantaged child populations. The recruitment of Social Workers, Speech Therapists, and an Occupational Therapist and a Psychologist has improved the quality of services which we can now offer to the children of Western Australia in the preventive health field. The addition of these new professionals promises us new dimensions in our work. Already they have proved invaluable, and plans are in hand to utilize their expertise in the most efficient ways possible.

1975 has seen also increased activity in the Pre-school field, which is reported on in more detail later in this Report.

STAFF

As forecast in the 1974 Annual Report, there has been a jump in staff numbers in 1975.

This can be seen in the following tables:—

TABLE 1

	1974 (31/12/74)	1975 (31/12/75)
Senior Medical Officers	3	4 (plus 1 vacancy)
Medical Officers	8	9 (1 part-time)
Social Workers	Nil	2
Occupational Therapist	Nil	1 (part-time)
Speech Therapist	Nil	2
Psychologists	Nil	1 (part-time)
Total	11	19 (3 part-time)

	1974 (31/12/74)	1975 (31/12/75)
Child Health Nurses	117	117
School Health Nurses	37	59
Total	154	176

TABLE 2

Child Health Section	Nurses
Appointments	27
Resignations	15
Retirements	10
Vacancies (31/12/75)	4
Staff (31/12/75)	117
School Health Section	**Nurses**
Appointment (new)	25
Resignations	2
Retirements	1
Vacancies (31/12/75)	Nil
Staff (31/12/75)	59

TABLE 3

VITAL STATISTICS

WESTERN AUSTRALIAN STATISTICS (1975)

	Perth Statistical Division	Rest of State	Whole of State
BIRTHS			
Live Births—			
Number	13 406	6 932	20 338
Rate per 1 000 population	17·03	20·68	18·05
Ex-Nuptial—			
Number	1 309	1 218	2 527
% of live births	9·76	17·57	12·43
Stillbirths (born after 20 weeks gestation)—			
Number	146	90	236
Rate per 1 000 total births	10·77	12·82	11·47
DEATHS			
Infants Deaths (aged under 1 year)—			
Number	150	121	271
Rate per 1 000 live births	11·19	17·46	13·32
Neo-Natal Deaths (aged under 28 days)—			
Number	108	78	186
Rate per 1 000 live births	8·06	11·25	9·15
Perinatal Deaths (stillbirths and neo-natal deaths)—			
Number	252	170	422
Rate per 1 000 total births	18·60	24·21	20·51

TABLE 4
INFANT MORTALITY IN WESTERN AUSRTALIA 1970–75

Year	Perth			Rest of State			Whole State		
	Live Births	Infant Deaths	I.M. Rate	Live Births	Infant Deaths	I.M. Rate	Live Births	Infant Deaths	I.M. Rate
1970	13 908	251	18·0	7 710	208	27·0	21 618	459	21·2
1971	15 843	269	17·0	8 396	195	23·2	24 239	464	19·1
1972	14 400	188	13·1	7 777	160	20·6	22 177	348	15·7
1973	13 307	213	16·01	7 203	181	25·13	20 510	394	19·21
1974	13 313	174	13·07	6 894	153	22·19	20 207	327	16·18
1975	13 406	150	11·19	6 932	121	17·46	20 338	271	13·32

TABLE 5
NEO-NATAL DEATHS AS A PERCENTAGE OF TOTAL INFANT DEATHS 1970-75

Year	Perth Statistical Division	Rest of State	Whole of State
1970	74·9	61·0	63·5
1971	69·0	61·5	65·6
1972	72·3	59·4	66·4
1973	73·23	59·66	67·00
1974	77·01	54·90	66·67
1975	72·00	64·46	68·63

Study of the vital statistics for 1975 shows a levelling off of numbers born in Western Australia around the 20 000 mark and an improvement in both Peri-natal and Infant Mortality figures for the State. This steady improvement over the past five years reflects the improvements in the management of confinements, in intensive care of the neonate and in preventive health services in the first year of life.

However, we cannot be complacement about these figures, when we compare infant mortality rates (16·2 per 1 000 in 1974) in Western Australia with those in other countries—TABLE 6.

TABLE 6
INFANT MORTALITY RATES FOR LOWEST 25 COUNTRIES WITH POPULATIONS OVER 2 500 000

COUNTRY	1973	1974
Sweden	9·6	9·2*
Finland	10·0	
Japan	11·3	
Netherlands	11·5	11·0*
Denmark	11·5	
Norway	11·8*	
Switzerland	13·2*	
France	15·5*	
Canada	15·6	
German Democratic Republic	16·0	
New Zealand	16·2*	
Australia	16·5*	
Hong Kong	16·8*	17·7*

TABLE 6—cont.

England and Wales					16·9	15·5*
Belgium					17·0*	
United States					17·7	16·5*
Ireland					18·0	
Spain					20·0	18·5
Czechoslovakia					21·2	
German Federal Republic					22·7	
Israel					22·8	
Austria					23·8	23·4*
Greece					24·1	24·0*
Italy					25·7	
Poland					25·8	23·5*

* Provisional data

What are really remarkable are the excellent figures for the leaders in the line-up—they produce rates not considered possible 24 years ago. These figures highlight the fact that there is more to be done in Western Australia if the present figures are to be improved, particularly in areas of disadvantage—be they socio-economic, cultural or geographic in origin.

It is hoped that a more detailed study of the factors involved in infant mortality in W.A. will be mounted in 1976, with a view to highlighting the areas of concern. The establishment of a top-level Child Health Consultative Committee, proposed for 1976, is seen as a positive step towards improved measures in the field of child health.

From Table 7 it will be noted that the infant mortality in Western Australia is in the middle of the field when compared with other States. The figure for Tasmania is somewhat surprising, particularly as it is high in all sections of the breakdown.

TABLE 7

STILLBIRTH AND INFANT MORTALITY RATES (*a*) (*b*)

Area of Registration	Total Births Including Stillbirths (*c*)	Stillbirth Rates (*c*)	Infant Mortality Rates				Total Mortality Infant Deaths and Stillbirths
			Under one week	Under one month	One month and under 1 year	Total under 1 year	
1974—							
New Zealand	59 847	8·5	8·0	9·3	6·1	15·4	23·9
1975—							
Western Australia	20 574	11·5	8·0	9·0	4·1	13·2	24·6
New South Wales	81 754	10·2	10·0	11·0	4·1	15·1	25·3
Victoria	62 610	11·4	7·4	8·7	4·2	12·9	24·3
Queensland	36 709	8·3	9·6	10·8	4·1	14·9	23·2
Tasmania	7 070	12·4	9·9	11·2	6·9	18·1	30·6
South Australia	20 175	9·4	6·3	7·3	3·7	11·0	20·4

(a) Rates calculated per 1 000 total births, including stillbirths.

(*b*) Infant mortality refers to deaths which occur from birth to one year of age.

(*c*) The term "stillbirth" refers to a child, not born alive, of at least 20 weeks gestation, or at least 400 grammes weight for all Australian States and of at least 28 weeks gestation for New Zealand.

CHILD HEALTH SECTION

Further Child Health Centres were established in 1975 at Swan View, Girrawheen (x 2), Roleystone, Koongamia, Two Rocks, Wickham, Busselton, Mandurah and Hilton.

Table 8 shows the present status as far as Child Health Centres are concerned Western Australia.

TABLE 8

Child Health Centres	Buildings
Metropolitan	121
Country	83
Caravans	4
Mobile Centres	2
Total	210

Increased use of Child Health Centres by other groups providing services for children is encouraging.

Table 9 is a summary of the work done in Centres during the past five years.

TABLE 9

WORK DONE IN CHILD HEALTH CLINICS 1971–75

	1971	1972	1973	1974	1975
Birth notifications received	22 227	19 184	18 034	18 345	18 744
Births registered	24 239	22 177	20 780	20 481	20 574
Gross Attendances	276 056	273 226	254 545	245 631	263 163
Individuals attending—					
under 1 year....	26 406	24 785	24 746	23 529	24 526
1–2 years	9 651	11 088	11 512	10 964	11 898
Over 2 years....	5 870	7 293	7 537	8 636	9 935
Total	41 927	43 166	43 795	43 129	46 359
Home Visits	31 697	33 343	32 598	34 386	37 641
Telephone consultations	26 957	28 984	29 444	32 463	36 901
Hospital visits	17 569	18 909	18 013	16 651	19 190
Urine tests	22 471	17 919	16 830	16 561	22 036
Number of Expectant Parent Classes	442	533	710	636	358

Work has been extended into Family Care Centres with the co-operation of the Community Welfare Department. Health screening and health support measures have been undertaken by Centre Nurses throughout the metropolitan and some country areas.

The Nursing Supervisor, Miss Chidlow, and the Nurse Educator, Miss Woolcott, attended a National Conference in Melbourne in July—"Goals in Nursing Education". This was considered valuable, and led on to a Western Australian workshop on this topic which was attended by additional members of Child Health staff.

Increasing demands are being made on Clinic and Educational staff to provide experience for both basic and post-graduate nursing trainees. This is a reflection of the greatly increased attention to provision of health care in the community rather than in hospitals.

With the development of domiciliary health services in the community with emphasis on general and primary health care, there is a tendency to dismiss a Child Health Service as narrow in its conceptions and its function, as serving only a small section of the total health needs. In 1975 our Service studied this question under the following headings.

66792/11/77—(8)

1. **Premises**

The number of centres increased from 45 in 1950 to 200 in 1974. This represents one Centre per 5 592 of the general population. Thirty four of such Centres were built in the previous five years. They extend from Wyndham in the North to Esperance in the South.

TABLE 10

Year	Number of Centres	Number of General Population Served per Centre
1950	45	12 726
1955	52	12 858
1960	63	11 604
1965	72	11 479
1970	169	5 757
1974	200	5 592

ATTENDANCES

With the risk of bowel and respiratory infections declining, with simplified artificial feeding, with clean and uncontaminated water and milk supply and with increased educational standards, one would expect a falling off of attendances at Child Health Centres over the years. In fact this is not so, in spite of doubts expressed in some quarters as to their value. Indeed, as the figures below show, there is a continuing popularity of the Child Health Centres.

Year	Registered Births	Total Attendances	Attendance/Birth Ratio
1959	17 111	233 446	13·64
1961	17 078	221 989	12·98
1963	17 290	244 956	14·17
1965	16 186	231 191	14·28
1967	18 023	240 513	13·34
1969	20 754	256 304	12·35
1971	24 239	276 056	11·39
1973	20 510	254 545	12·41
1974	20 481	245 631	13·38

This increase in attendance at the Centres has not been confined to infants, it has been spread over the three age groups—under 1 year, 1–2 years and 2–5 years.

In 1974 the percentage attendance of children in the age groups were as follows:—

Under 1 year 98%
1–2 years 50%
2–5 years 34%

Compared with 1958 figures, there has been a highly significant improvement in the attendances of each age group:

Under 1 year .... 15% improvement
1–2 years .... 250% improvement
2–5 years .... 700% improvement

These figures correlate well with similar studies carried out in other centres—Geelong (Victoria)[1], Adelaide (S.A.)[2] and the United Kingdom[3].

1. **The effect of social class on attendances**

   The use of Child Health Centres varies according to the social class of the family. From April to June, 1974 and from July to September, 1974 there were as follows in W.A.:—

   Wembley Downs 93% and 100%
   Nedlands 85% and 95%
   Balga 86% and 80%

   The percentage of mothers attending can be seen to be lower in Balga as compared with Wembley Downs and Nedlands. The Balga figures are similar to those in Coolbellup (85%), Midland (85%), Lockridge (83%) and Fremantle (80%) i.e. lower socio-economic groupings. These observations were also made in the Geelong survey.

   All these figures support the view that the mothers from the more well-to-do suburbs are enthusiastic attenders of Child Health Clinics during the first year of life of their children. Ways and means of improving the attendance in working class suburbs are dealt with later in this report.

2. **Staffing**

   Child Health Centres are staffed by triple-certificated nurses—those holding general, midwifery and child health certificates.

   The number employed is shown below:—

Year	Number Employed	Year	Number Employed
1945	Unknown	1965	91
1950	Unknown	1970	95
1955	57	1974	116
1960	76		

   The traditional way of deploying Child Health Nurses is by allocating them on a geographical basis within a local authority area.

3. **Work Undertaken in Child Health Centres**

   Clinic staff are concerned with:—

   (a) Advising and reassuring mothers—a counselling role
   (b) Weighing children
   (c) Checking for defects in growth and development
   (d) Health education

   These are the roles as perceived by parents. There is no doubt that there is appreciation of the work of clinics by parents—the figures quoted previously support this—but there is a need for more evidence from parents i.e. a consumer evaluation. It is as well to know what the customer wants.

   The study carried out in Geelong, Victoria ([1]), quoted previously, came up with the following suggestions from parents concerning improvement in service:—

   1. Clinics should be open for longer hours.
   2. They should be open at different hours.
   3. There should be more staff.
   4. There should be better staff.

5. More comprehensive service.
6. More convenient locations.
7. More home visits.

i.e. Mothers want conveniently situated clinics that are open for longer hours and in which the staff give a broader and more comprehensive service to their children and are more able to visit the homes.

The study carried out by Murrell and Moss ([2]) in Adelaide came to the same broad conclusions, and I would think that a similar questionnaire in Western Australia would reveal the same answers. However, such a study is needed and is planned for 1976.

SCHOOL HEALTH SECTION

Rapid development and change took place in the School Health Section during 1975 due to implementation of programmes planned and initiated during 1974. This has resulted in great complexity of organisation and funding. Source of funds at present stem from, not only the State Government of Western Australia, but also Commonwealth-funded programmes under the Schools Commission, Children's Commission and Hospitals and Health Services Commission. It has been possible to integrate these into a satisfactorily functioning whole, in conjunction with other sections of the Child Health Service. As a result, we are beginning to see the realisation of our aim, to provide an integrated ongoing Child Health Service from infancy until the end of adolescence.

STAFF

We very much regretted having to accept the resignation of Miss J. Deane the Nursing Supervisor of the School Health Section on October 17, 1975. It was largely due to her energy, enthusiasm and planning that the programme is now proceeding as successfully as it is. Miss L. Keddie has stepped very ably into her place and brings with her a wealth of experience from working in the Schools Section.

Total Staff Establishment

1/1/1975—46
31/12/1975—72

This great increase in staff has been largely due to the establishment of the School-based Services, in which a nurse actually works on the staff of a high school or a primary school. This programme is funded by the Schools Commission and has proved to be extremely successful.

This was a major innovation during 1975 as was the change in the relative responsibilities of the School Health Nurse and the Medical Officer. All routine health appraisals in school children are now undertaken by the nurse, and cover the following areas:—

Vision, hearing and physical examination. Physical examination includes cardiac auscultation and speech and developmental screening. The Medical Officers have changed their function to assessment and more examination in depth of the child presenting with problems at the school. They now only see children referred by teachers, parents, nurses or other agencies who are considered likely to have a health problem. Results of this change are presented in the report below, as the findings have been carefully monitored. This has greatly extended the amount of time required for training, the School Health Nurses now undertake an Orientation Course of four weeks' duration. This course concentrates on the principles of physical examination, cardiac auscultation and screening tests. It includes an intensive two-week practical programme within the schools with instruction and supervision by Medical Officers. Attendance at the Cardiology Clinic at Princess Margaret Hospital is arranged for all nurses, and Dr. O. Tofler, Senior Cardiologist at Princess Margaret Hospital has supported the programme at all times.

TARGET POPULATION

Staff of the School Health Section of Child Health Services aim to visit every pre-school and school south of the 26th parallel and to provide preventive health services and health education to the pre-school and school population attending such institutions. The number of institutions in the State is shown in Table 1.

TABLE 1

NUMBER OF INSTITUTIONS—1975

	Metropolitan	Country	Total
Child Care Centres	81	18	99
Kindergartens—(Pre-School Board)	167	165	332
Government Schools (Primary)	249	263	512
Government Schools (Secondary)	41	25	66
Government Schools (District High, Primary and Secondary)	....	50	50
Catholic Education Commission Schools (Primary)	64	41	105
Catholic Education Commission Schools (Secondary)	16	9	25
Independent Schools	30	5	35
Total			1 224

Those visited in 1975 by the School Health Staff are shown in Table 2.

TABLE 2

INSTITUTIONS VISITED IN 1975

	Metropolitan	Country	Total
Child Care Centres	78	8	86
Kindergartens	167	156	323
Primary Schools (Government and Non-Government)	328	160	488
Secondary Schools (Government and Non-Government)	42	37	79
Total			976

Note: Institutions in Pilbara and Kimberley Regions visited by Community Health Services.

It can be seen that 976 out of 1 224 educational institutions were visited. The deficit covers the country areas which were not visited during 1975 because of lack of country staff. This will be rectified in 1976.

The total number of enrolments in 1975 is shown in Table 3.

TABLE 3

ENROLMENTS 1975

Child Care Centres		2 390
Kindergartens (Pre-School Board)		15 290
Government Primary	132 204	195 024
Government Secondary	62 820	
Non-Government Primary	24 788	43 373
Non-Government Secondary	18 585	
Total		256 077
School Entry Target Population (Year 1)		24 114

The total number of pre-school and school children examined by School Health Nurses in 1975 is shown in Tables 4 and 5.

TABLE 4

NUMBER OF PRE-SCHOOL CHILDREN EXAMINED BY SCHOOL HEALTH NURSES 1975

	Metropolitan	Country	Total
Full Health Appraisals (Including screening tests and physical examination)	11 266	2 728	13 994
Vision tests	11 410	2 800	14 210
Hearing tests	11 396	2 793	14 189

Appendices 1 and 2 show the number of Pre-school and School children examined broken down into boys and girls.

TABLE 5

NUMBER OF SCHOOL CHILDREN EXAMINED BY SCHOOL HEALTH NURSES—1975

	Metropolitan	Country	Total
Full Health Appraisals (Including screening tests and physical examination)	15 147	3 629	18 776
Vision tests	65 392	22 566	87 958
Hearing tests	54 827	20 006	74 833

It can be seen that the total number of full health appraisals carried out by School Health staff during 1975 is 32 770. As the majority of these are in the school entry target population (Year 1) of 24 114, then the figure covering the school population of 18 776 is probably adequate. The deficit again reflects the lack of services to country children, which will be improved upon in 1976 with added staff. Particularly pleasing is the number of full health appraisals carried out on pre-school children, which totals 13 994. This reflects the policy of the Service in carrying the initial school health appraisal into the pre-school population wherever possible; out of a total pre-school target population of 17 680, 13 994 were examined. More country pre-school children will be included in 1976.

A full health appraisal covers the areas mentioned above of vision, hearing (including screening audiometry), physical examination—including cardiac auscultation and speech and developmental screening. In order to facilitate these targets and also to expand the service into the area of counselling and health education to school children and their families, the following changes took place in 1975:

1. **Decentralisation of Service**

   Six of the teams in the School Health Section were relocated in planning terms in the areas where they would be working. These locations were as follows:—

   Child Health Services Centres—

   Koondoola
   Southwell
   Queens Park

These three centres were originally funded by the Children's Commission and building commenced during 1975; all three centres were completed by the end of the year. They will offer a range of multi-disciplinary services for children of all ages and will also provide District Headquarters for the School Health Team.

The staffing for each centre is planned as follows:—

1 Medical Officer,
1 Speech Therapist,
1 Supervising Nurse,
3 School Health Nurses of the District Team,

Sessional visits from a Guidance Officer and a Social Worker seconded by the Education Department.

These proposals have attracted a great deal of interest. The three schools selected for the siting of these centres will also house a Dental Health Unit.

School Services Centres—

Hollywood
Innaloo
Midland

This project was initiated in 1974 and represents a further move towards Regional School Health Services. These Centres house the staff of the School Health Section in combination with the staff of the Guidance and Special Education Branch of the Education Department. It is an innovatory scheme and aims again at providing integrated services to children throughout a district. Source of the funding is the State Government of Western Australia. The two centres at Hollywood and Innaloo were completed in 1975 and two teams from the School Health Section moved into them during November 1975. The move to the Midland Centre is planned for early 1976. So far the co-operative venture appears to be succeeding and reports are encouraging.

2. **Country Programmes**

School Health Nurses are now based in:—

Albany
Bunbury
Esperance
Geraldton and
Kalgoorlie.

This was initiated in 1974 and is proving very successful. In Albany the School Health Nurse has moved into the Education Department Regional Resource Centre, and is sharing office accommodation with the District Guidance Officer. In the other Centres the nurses are working from their own homes. Regular and frequent visits were made by medical officers during 1975 to fully assess the children identified by the nurses and teachers at the schools as needing further attention. In this way, a service of equivalent standard to the Metropolitan Area has been provided in these country areas. It is planned to expand the country service during 1976.

Country schools not visited regularly by a nurse living in the area were visited as previously by metropolitan staff of the School Health Section. This is felt to be inadequate, as a once yearly visit does not provide adequate follow-up for country children. Schools at Laverton, Leonora and Menzies were visited regularly by arrangement with nurses from the Community Health Services.

3. **School Based Nurses**

(a) *High School Programme*

What has become known as the High School Programme is, in fact, a misnomer, as each nurse based at a high school visits regularly three of the contributory primary schools.

It is hoped than an ongoing co-ordinated health programme—including health education, screening, counselling and first aid—can be established for a group of schools. Each nurse establishes close working relatinoships and is identified with the school staff in which she works. She is thus able to work in a team with a Guidance Officer, Social Worker, Principal Mistress and class teachers. Where necessary, referrals are made outside the school to family doctors and the medical officers of the Child Health Services. During 1975, ten more nurses were appointed under this programme and are now working on the staff of the following high schools, with their contributory primary schools:—

Belmont Senior High School	Hollywood Senior High School
Balga Senior High School	Girrawheen High School
Bentley Senior High School	Governor Stirling Senior High
Kewdale Senior High School	Hampton Senior High School
Rossmoyne Senior High School	Geraldton Senior High School
Lockridge High School	Collie Senior High School
Kwinana Senior High School	Albany Senior High School

(b) *Disadvantaged Schools Programme*

This new and innovatory programme has proved very successful and there are now six nurses working in the programme, based at the following five disadvantaged schools:—

Hilton Primary School	Highgate Primary School
Midvale Primary School	South Fremantle Senior High School
Hamilton Senior High School	

4. **Health Education Programmes**

Because it is considered that Health Education is an important responsibility of the School Health Nurse, an organised health and social education programme has been commenced. A course was developed by a specially appointed Special Duties Sister who is also a teacher, and has been offered in all the schools in which a nurse is based, in conjunction with the teaching staff. The course covers such areas as relations between the sexes, preparation for parenthood and family life, changing views of marriage, continuity of life, problems facing society and the control and transmission of venereal disease.

Schools involved	10
Number of students involved:—	
2nd term	1 410
3rd term	880

Many more schools have requested this course than has been possible to visit, and at present our policy is that it is offered in the schools where a nurse from the School Health Section is on the staff of the school.

5. **Integration of Physically Handicapped Children**

A School Health Nurse has been appointed to the staff of Hollywood High School to assist in the integration of physically handicapped children from the Lucy Creeth Hospital School into a normal secondary school setting.

TABLE 6

SCHOOL BASED NURSES—ACTIVITIES 1975

Health appraisals and Vision and Hearing Tests	Included in general figures
Student Contacts (First Aid and Counselling)	28 796
Home Visits	394
Staff Contacts	658
Health Education Programmes	
Primary Schools	14
Secondary Schools	13
Year 9 classes	13
Year 10 classes	53
Student involvement	
Home Nursing, First Aid	253
Social Education	2 290
In-Service Courses for Teachers	4
Teacher Involvement	50
Weight Watchers' Groups	68

PRE-SCHOOL HEALTH TEAM

The Pre-school Health Team was formed during 1975 to provide a preventive health service for all children in Day Care and Family Care centres, as well as Kindergartens in the areas corresponding to Disadvantaged Schools. The Team provides child health screening, assessment and evaluation of physical and emotional difficulties and the initiation of treatment or counselling of families. It is also concerned in the setting up of health standards in the day-to-day running of Day Care Centres. The Team consists of:—

1 full time and 1 part time Medical Officer
1 Social Worker
1 Speech Therapist
3 Pre-School Sisters
1 Typist

Close links have been established with the Early Childhood Services Section of the Department for Community Welfare, the responsibilities of which include licensing and maintenance of Day Care Centres, advice on the operation of the centres and on problems of individual children and parents. Co-operation at local level is being encouraged to avoid duplication and conflict of advice to Centre staff.

Family Care Centre children will continue to be screened by the Child Health Nurses working from Centres, but the two Medical Officers of the Pre-School Team will carry out the physical examination of each child during the course of the year in liaison with the Nurses. The whole question of children who are committed to long hours of day care away from their parents is a difficult one, and the setting up of special services to meet the needs of these children is obviously necessary.

MONITORING OF HEALTH APPRAISALS AND SCREENING SERVICES

To ensure adequate monitoring and follow-up of children found to have any disability, it is essential that an adequate recording system is established. 1975 has seen improvements in this regard.

Table 7 refers to the total number of examinations carried out by School Health Nurses in 1975, and the total number of referrals made to Medical Officers, family doctors and parents. These figures show that a total of 12 374 children were considered by the nurses to require some further investigation. Possible visual handicaps are now referred through the parents directly to the family doctor for specialist consultation. A total of 8 297 children were referred to the Medical Officers of the Child

Health Services for further assessment. Sources of referral for medical officers are now derived not only from teachers but also parents and other agencies.

TABLE 7

TOTAL NUMBER OF EXAMINATIONS AND REFERRALS BY SCHOOL HEALTH NURSES 1975

Total number of full health appraisals	32 770	
Total number of vision tests	102 258	
Total number of hearing tests	92 022	
Referred for assessment of visual handicaps to family doctor		2 166
Referred for assessment by medical officer		8 297
Referred for home attention to parents (hygiene, nutrition, infections, infestations, colour blindness)		707
Referred for dental attention		1 204
Total		12 374

Table 8 shows the sources of referral to medical officers during 1975. This shows that a total of 13 127 children were referred to Medical Officers of Child Health Services during this year. Of these, a total number of 2 728 children were identified as having a disability or a handicap requiring ongoing assessment and management. **Table 9** shows a classification of confirmed disabilities and handicaps under systems.

TABLE 8

EXAMINATION BY MEDICAL OFFICERS—1975

Source of Referral	
School Health Nurses	8 297
Teachers	4 545
Parents	132
Guidance Officers	137
Child Health Sisters	15
Child Guidance Clinic	1
Total	13 127

TABLE 9

CLASSIFICATION OF CONFIRMED DISABILITIES UNDER SYSTEMS

Perceptual Handicaps		
Vision		1 316
Glasses prescribed	775	
Hearing loss		376
Hearing aid supplied	10	
Cardiovascular System		
Organic Heart Disease		27
Congenital Heart Disease	19	
Rheumatic Heart Disease	4	
Arrythmias	4	
Musculoskeletal System		32
Disorders of growth and Nutrition		18
Genito-urinary System		154
Central Nervous System		53
Psychosocial and Developmental Disorders		454
Speech Disorders		298
Total		2 728

These 2 728 children all presented with a disability or a handicap which had not previously been investigated or under treatment. Children already under treatment are not included in this list. Also children about whom no further information is available are not included. It is interesting to note that the largest group, as may have been predicted, are those presenting with handicaps in the area of vision and hearing; also the very large number of children presenting with psychosocial, developmental and speech disorders.

However, the number of children presenting with an unsuspected physical disability, such as organic heart disease is not inconsiderable and indicates that the routine screening examination of pre-school children is justified and must continue.

Table 10 gives details of assessments and referrals by Medical Officers indicating the number of children referred to family doctors and other agencies, as well as the number who have been managed solely in this Department in conjunction with the Guidance and Special Education Branch. Of particular note is the fact that the vast majority of children referred outside our Service are still being seen in conjunction with the family doctor.

TABLE 10

ASSESSMENTS AND REFERRALS BY MEDICAL OFFICERS 1975

Total number of children examined	13 127
Assessed jointly with Guidance Branch	397
Referred to:—	
Family doctor (including nurses' vision)	3 315
Assessment Centre (Rheola Street)	26
Guidance Branch	198
Irrabeena	6
Speech Therapy Services	298
Princess Margaret Hospital	177
Fremantle Hospital	42
Private Specialists	103
National Acoustic Laboratory	36
Perth Dental Hospital	3
Community Health Services	8
Department for Community Welfare	3

Table 11 analyses the causes and management of confirmed visual handicap. Although information was received from only 1 348 children—mostly metropolitan—this indicates a very high degree of accuracy in the visual testing undertaken by the nurses. Out of the 1 348 followed up, 1 138 had refractive errors confirmed by an ophthalmologist and spectacles were prescribed for 775. Only 32 out of the whole of this group were found to have normal vision, which indicates the accuracy of assessment.

TABLE 11

CAUSES AND MANAGEMENT OF VISUAL HANDICAP

Number of Children Identified by Nurses as Having Possible Visual Handicaps	
Metropolitan	1 653
Country	508
Total	2 161
Ophthalmologists' Assessments	
Metropolitan follow-ups	1 653
Information received from	1 348
Refractive errors	1 138
Infections	22
Trachoma	9
Strabismus	125
Congenital Cataracts	4

TABLE 11—cont.

Ptosis	7
Amblyopia	6
Congenital Nystagmus	3
Keratoconus	2
Normal Vision	32
Awaiting information and lost to follow-up	305
Management	
Spectacles prescribed	775
Surgery	28
Observation	82

Table 12 analyses the causes and management of hearing handicap confirmed in the children examined. Out of a total of 797 children assessed by Medical Officers as having a possible hearing handicap, definite information was received from 376. It is disturbing to note that in 10 of these children the hearing handicap was sufficiently severe to warrant a hearing aid. These conditions should have been detected earlier, and indicate the need for routine screening for hearing to be carried out at an earlier age than at present. Currently most infants have hearing screening under the age of 12 months, but this should be repeated prior to the entry to a pre-school institution.

TABLE 12

CAUSES AND MANAGEMENT OF HEARING HANDICAP

Number of Children Identified by Medical Officers as having Possible Hearing Handicap	
Metropolitan	463
Country (102 Eastern Goldfields)	334
Total	797
Causes of Hearing Loss (Confirmed on Follow-up)	
Information received from	376
Sensorineural Deafness	82
Secretory Otitis Media (Glue Ears)	125
Chronic Suppurative Otitis Media	36
Perforation (Chronic)	40
Foreign Bodies	21
Otitis Externa	24
Transient Hearing Loss (U.R.T.I.)	12
Under Observation (Specialist)	18
Management	
Hearing Aids Supplied	10
E.N.T. Surgery	150

Table 13 shows the causes and disabilities of handicaps found on physical examination classified under Systems. Of particular interest is the fact that 121 children were investigated by a paediatrician or a cardiologist for suspected disorders of the Cardiovascular System and of these children, a total of 27 were found to have organic heart disease, either congenital or rheumatic in origin. This does not include children already identified as having an organic heart condition. The two children with patent ductus arteriosus were both submitted successfully to surgery.

This again shows that routine examination in the neonatal period is not detecting all cases of potentially treatable congenital heart disease in children. The four children with previously unsuspected rheumatic heart disease would also benefit from long-term prophylactic chemotherapy.

Under the heading "Musculoskeletal System" three children were identified as having previously undiagnosed muscular dystrophy and ten had scoliosis severe enough to warrant further investigation. This question of scoliosis is the subject of a survey to be described below.

TABLE 13

CAUSES OF DISABILITIES FOUND ON PHYSICAL EXAMINATION

CARDIOVASCULAR SYSTEM	
Total Investigated	121
Congenital Heart Disease	19
Atrial Septal Defect	8
Ventricular Septal Defect	4
Aortic Stenosis	1
Pulmonary Stenosis	4
Patent Ductus Arteriosus	2
Rheumatic Heart Disease	4
Functional Murmurs	76
Paroxysmal Tachycardia	2
Right Bundle Branch Block	1
Total Organic Heart Disease	27
MUSCULOSKELETAL SYSTEM—	
Muscular Dystrophies	3
Scoliosis	10
Feet (Pes Planus etc. causing problems)	14
Perthe's Disease	1
Post Traumatic Arthritis	1
Torticollis	1
Short Tendo Achilles (both had surgery)	2
DISORDERS OF GROWTH AND NUTRITION—	
Undernutrition	6
Obesity (Medical Officers only)	8
"Short Child" Syndrome (growth retardation)	4
GENITO-URINARY SYSTEM—	
Bilateral Undescended Testes	11
Unilateral Undescended Testes	27
Retractile Testes	39
Inguinal Hernia	32
Hydrocoele	17
Urinary Incontinence	3
Urinary Tract Infection	18
Acute Glomerulonephritis	1
Enuresis	6
CENTRAL NERVOUS SYSTEM—	
Congenital Hypotonia	1
Cerebral Palsy	1
Congenital Tremor	8
Migraine and Recurrent Headache	19
Epilepsy	7
"Clumsy Child" Syndrome (Developmental Dyspraxia	17
SKIN DISORDERS—Most Referred by Nurses (Infections Naevi)	3
ORTHODONTIC CONDITIONS	3
ACUTE APPENDICITIS—(Presenting at School)	1

The Genito-Urinary System yielded a large group, mainly because of previously undiagnosed inguinal hernia and undescended testes. This group in itself is large enough to warrant the continuation of routine screening examination as all these conditions require surgery.

Table 14 shows psychosocial and developmental disorders.

This is a very big group—almost as large as the group presenting with previously unsuspected visual and hearing handicaps. All the children diagnosed as having speech disorders had this diagnosis confirmed by a Speech Therapist. The very large number of learning and behaviour disorders indicate that the expansion of the activities of the School Health Section into a multi-disciplinary association with workers from other agencies, in particular the Guidance and special education Branch is long overdue. With the provision of decentralised District Offices it is hoped that many of these children will be able to be managed at a district level, and will not be subjected to time-wasting multiple referrals to other agencies.

TABLE 14

PSYCHOSOCIAL AND DEVELOPMENTAL DISORDERS

Speech disorders (Requiring speech therapy)	298
Mental Retardation	16
Developmental delay	8
Behaviour disorder (Requiring psychiatric or outside investigation)	14
Encopresis	3
Hyperkinesis	3
Learning and Behaviour Disorder managed jointly with Guidance Branch	397
Child abuse and neglect	3

In conclusion, it can be seen that screening services for children yield a very worthwhile result. It is our aim that no child in Western Australia should go through his school career with an unsuspected handicap; the degree of cover now given in Western Australia to the child population is satisfactory, but can be improved upon.

The big area of the psychosocial and developmental disorders remains a problem, and Medical Officers of the Child Health Services are being prepared to play a much more positive role in their management. During 1975 Dr. G. Dixon, visiting Psychiatrist of the Department of Psychological Medicine at Princess Margaret Hospital for Children, arranged an Inservice course totalling 30 hours for Medical Officers of this Service. This will be continued in 1976 and is preparing the Medical Officers in such skills as psychiatric examination of children and counselling of parents.

The competent work carried out by the nurses in the area of physical examination is worthy of special note, and they are to be congratulated on the efficiency with which they have carried out their new responsibilities. This is the subject of two surveys and papers, as indicated below.

SURVEYS UNDERTAKEN DURING 1975

1. "CORRELATION OF INTAKE OF ENERGY OUTPUT AND CALORIC INTAKE IN TEN YEAR OLD SCHOOL CHILDREN".

By:—Mrs. S. G. Langelaan—Consultant Dietitian of the Public Health Department.
Mr. T. Odgers—Lecturer in Physical Education, Graylands Teacher Training College.
Dr. J. M. Henzell—Senior Medical Officer, Child Health Services.

The results of this survey are to be presented at the A.N.Z.A.A.S. Meeting in Hobart in May 1976. A survey of 357 Year 4 children in a cross-section of eleven West Australian primary schools showed an inadequacy of intake of nutrients using a 24 hour recall method. 40 per cent of boys and between 38 per cent and 45 per cent of girls had an intake below the Australian Dietary Allowances of Calcium and Iron on the survey day and 37 per cent of boys and 33 per cent of girls had an intake of Ascorbic Acid below the Dietary Allowance on the survey day. A substantial proportion of pupils had an intake of vitamins of the B Group below the Dietary Allowances on the survey day.

2. "A SURVEY OF FOOD INTAKE IN CANTEENS AT 16 DISADVANTAGE SCHOOLS IN THE METROPOLITAN AREA."

By:—Mrs. S. C. Langelaan—Consultant Dietitian of the Public Health Department.
Dr. N. Cohen—Lecturer in Nutrition, W.A.I.T.

This survey showed that 55 per cent of students arrived at school having had an inadequate breakfast and 30 per cent of mid-morning snacks and 30 per cent of lunches consisted of "empty" calories only. A high proportion of students used the canteens in the Disadvantaged Schools and of the 16 canteens surveyed, 50 per cent sold confectionery regularly, and 100 per cent sold aerated waters.

3. "A SURVEY OF BREAKFAST PATTERNS AND ATTENDANCE TO SCHOOL NURSE".

By:—Sister J. Jones and Sister L. Stevens—South Fremantle Senior High School.

This survey showed a high correlation between attendance to the School Nurse, complaining of symptoms such as headache, giddiness and fainting, with an inadequate breakfast pattern. This study has implications for the future provision of breakfast snacks at school.

4. "A COMPARISON OF THE FINDINGS OF NURSES AND MEDICAL OFFICERS IN SCREENING EXAMINATIONS FOR HEART DISEASE IN CHILDHOOD".

By:—Dr. J. M. Henzell—Senior Medical Officer, Child Health Services.

2 334 children were examined by both a nurse and a Medical Officer and the findings elicited by auscultation of the heart with a stethoscope compared. Fourteen children were identified as having suspected organic heart disease and five of these were found to have confirmed organic heart disease on follow-up. In no cases did the nurses fail to identify suspected or confirmed organic murmur on initial examination.

Late figures available after completion of the survey show that further cases of organic heart disease are being identified. It is felt that cardiac auscultation by a School Health Nurse is a valuable and necessary component of the pre-school and school entry screening examination and health appraisal. The findings of this study are to be incorporated in another paper to be presented at the Australian Paediatric Association in Canberra in April 1976, entitled: "The expanded Role of the School Health Nurse in Paediatric Screening".

5. "INVESTIGATION OF INCIDENCE OF SCOLIOSIS IN PRIMARY SCHOOL CHILDREN".

By:—Dr. J. R. Taylor, M.N., Ch.N., Ph.D.—Senior Lecturer, Department of Anatomy, University of Western Australia.

This study was initiated during 1975 and will provide very valuable information as to the incidence of scoliosis in other primary and lower secondary school children. This incidence has been found in New South Wales to be of the order of between 5 per cent and 10 per cent, and it is important to determine if these figures also apply to Western Australia. It will have implications for future school screening examinations.

6. "SURVEY OF TEACHERS' REFERRALS—INNALOO DISTRICT 1975".

By:—Dr. P. C. Miller—Medical Officer, Child Health Services.

This survey covered 260 children selected from primary schools in the Innaloo area. It showed that, although the teachers were asked to identify potential health problems in children, in the majority of cases nothing medically or physically abnormal was detected. There were, however, a very considerable number of behaviour disorders, such as headaches, aggressive behaviour, enuresis, etc., which seem to be related directly to home situations.

7. "HEALTH AND NUTRITION SURVEY—DISADVANTAGED SCHOOLS".
By:—Dr. R. W. Roberts—Director, Child Health Services.
Mr. Derek Woodhead—Headmaster, Education Department.
Mrs. Jill Mack—Research Assistant, Child Health Services.

This survey compared the health, behaviour and nutrition practices in the ten year old child populations of three "disadvantaged" schools with a similar population in three "Non-disadvantaged" schools. There were differences between the two groups, particularly in behaviour. The survey was carried out for the Western Australian Advisory Committee of Disadvantaged Schools and has formed the basis of the School Health sectors work in the Disadvantaged Programme.

LINKS WITH OTHER DEPARTMENTS PROVIDING CHILDREN'S SERVICES

Close working links have been established during 1975 with the Education Department, the Pre-School Board and the Department for Community Welfare. In the School Health Section these links are in the following areas:—

1. **School based Nurses**
   The employment of nurses by the Public Health Department based in schools has proceeded very well due to close links being established with the Education Department. While the Public Health Department is the employing body, funding is derived from Education Department sources and the nurses are regarded as a member of the school staff. This is essential for them to be effective in delivering preventive health services to children and their families.

2. **School Services Centres**
   These centres in Innaloo, Hollywood and Midland are operated jointly by the Education and Health Departments.

3. **Child Health Services Centres**—(Formerly known as Pre-Primary Centres)
   These are to be established in Koondoola, Southwell and Queens Park and are also examples of joint planning and staffing.

4. **Pre-School Health Team**
   This Team is working in close collaboration with the Department of Community Welfare, establishing links so as to provide a multi-disciplinary service.

It is expected that these links will be further strengthened during 1976. Unless close working relationships are established with other Departments providing services to children, there is bound to be duplication and overlap. Joint use of buildings would seem to be a necessary part of overall planning so that more effective use can be made of capital funds expended. This, combined with the already strongly established links with the Community Health Service, will ensure an effective health delivery system for young children and their families.

APPENDIX TO TABLE 4

NUMBER OF PRE-SCHOOL CHILDREN EXAMINED BY SCHOOL HEALTH NURSES 1975

	Metropolitan			Country			Whole State		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Full Health Appraisals (Including Screening Tests and Physical Examination)	5 662	5 604	11 266	1 400	1 328	2 728	7 062	6 932	13 994
Vision Tests	5 724	5 686	11 410	1 462	1 338	2 800	7 186	7 024	14 210
Hearing Tests	5 712	5 684	11 396	1 458	1 335	2 793	7 170	7 019	14 189

APPENDIX TO TABLE 5

NUMBER OF SCHOOL CHILDREN EXAMINED BY SCHOOL HEALTH NURSES 1975

	Metropolitan			Country			Whole State		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Full Health Appraisals (Including Screening Tests and Physical Examination)	7 690	7 457	15 147	1 875	1 754	3 629	9 565	9 211	18 676
Vision Tests	33 095	32 297	65 392	11 300	11 266	22 566	44 395	43 563	87 958
Hearing Tests	29 071	25 756	54 827	10 380	9 626	20 006	39 451	35 382	74 833

ASSESSMENT CENTRE

The three main functions of the Child Health Services have been listed as:—

1. Health Education
2. Screening
3. Counselling

With the appointment of a Senior Medical Officer (Handicapped Children), in February 1973, attention focused on the improvement of screening techniques with the Department. The Stycar Screening Tests for vision and hearing as well as the Stycar Developmental Sequences were chosen as useful screening tools for medical and nursing personnel within the Service and an educational training programme was embarked upon. At the same time it was realised that if children are being screened as having potential problems of development there needs to be a backup facility for further investigation of their suspected problem. Although for some families it was appropriate for children to be seen at Princess Margaret Hospital or by their own family practitioner, it was felt that the service should provide its own backup and resource facility.

Assessment of children commenced during 1973 with the opportunity for field workers within the Child Health Services to refer families to the developmental paediatrician. In April 1974 a submission for the establishment of a State Assessment Centre for handicapped children was made to the National Hospitals and Health Services Commission. This submission was successful and Commonwealth funding was provided for the establishment of a Handicapped Children's Assessment Centre. Such a Centre was based on the concept of a multi-disciplinary approach and during 1975 the following staff were appointed:—

Social Work Supervisor
Senior Speech Therapist
Part-time Developmental Psychologist

The post of Developmental Paediatrician was approved and advertised, but remains unfilled. In addition to clerical staff already appointed, it is hoped to add to the team a Librarian, Educational Psychologist and Occupational Therapist.

Plans are underway for a new Assessment Centre building to be situated in Rheola Street, West Perth, and it is hoped that the building will be commenced during 1976.

Referrals to the Assessment Centre have been received in the main from Child Health Sisters, Child Health Medical Officers, Education Department, Community Welfare Department workers and medical practitioners. The major problems referred have been the following:—

Developmental delay,
Lack of educational progress,
Speech delay,
Behavioural management problems.

66792/11/77—(9)

Full appraisal of the clinical work of the Centre will be presented in the 1976 report. It is hoped that the Assessment Centre will serve the following functions:—

(1) Clinical,
(2) Educational,
(3) Resource Centre (literature, linkage with other centres, equipment for handicapped children, toy library, etc.),
(4) Research.

It is planned that during 1977 a post graduate training programme in developmental paediatrics be offered to medical graduates.

SCHOOLS RESOURCES SECTION

Almost exclusively confined to the field of Education for Parenthood in secondary schools, this section has been busy in 1975 because of increased demand from schools and overhauling of written material for the parenthood course.

The express aim of extension of this Course into Teachers Colleges has met with difficulties—it is hoped that these will be overcome.

6 152 Second Year High School students undertook the Parenthood Course in 1975. These were drawn from a total of 43 schools—26 metropolitan and 17 country. 147 teachers were involved in the mounting of these courses.

This section has also been involved with extra-curricular talks to students on nutrition, growth, development and family planning.

Recruitment of suitably trained and motivated staff is a difficulty in this sphere—particularly in view of increased community interest and demands in the area.

CORRESPONDENCE SECTION

1975 has seen a depletion of staff in this section, mainly due to the retirement of four senior nurses. The special nature of this work has made replacement difficult; however, it is fortunate that recruitment of young, enthusiastic, nurses into the section has seen little reduction in the activities.

Provision of support, counselling, parent education and health screening services to mothers and young children (particularly infants) in remote areas continues in popularity and usage as the figures in Table 15 indicate. This work has been integrated with the Special Needs Section, i.e. provision of correspondence lessons in the field of interpersonal and family relationships to primary school children in remote and disadvantaged areas.

TABLE 15

Birth notifications to section	1 028
Letters received	20 429
Letters sent	22 295
Telephone advice	3 228
Screening tests—	
P.K.U.	571
Vision	738
Hearing	854
Correspondence students	1 375

The following areas were visited by the staff to cement contacts made by correspondence:—

Murchison (15 days)	2 Nurses
Pilbara (17 days)	2 Nurses and 1 Trainee
Kimberley (23 days)	2 Nurses
Eastern Goldfields (21 days)	2 Nurses and 1 Trainee
Onslow (1 day)	
Welfare Care (Trans Australian Railway Line)	6 trips by 2 nurses

The work of this section more and more involves working closely with other Child Health and Community Health workers in the field, particularly in the remote areas.

PARENTHOOD SECTION

1975 was a busy year and although we were unable to expand as fully as we had planned, much was achieved.

Expectant Parent Classes

	Total Attendances	Classes Held	Staff Participating
Metropolitan Area	7 792	475	5
Country Area	1 022	174	11
Total	8 814	649	16

This represents an increase in attendances of 2 per cent (approximately) in the metropolitan area, and 40 per cent (approximately) in the country area.

The latter was particularly pleasing as the increase in staff participating was only two. Some metropolitan classes had to be cancelled during November and December owing to staff shortage through illness, and this had some effect on the metropolitan attendances.

Classes were started at Wyndham, Wanneroo, Beachlands, Geraldton, Moora, Kellerberrin and Three Springs. There is an increasing demand for such educational programmes—highlighting the change in emphasis in the work of the Child Health Services.

Appendix VIII

Pharmaceutical Services Branch

W.M. Griffiths, B. Pharm., F.P.S. (G.B.), M.P.S.
Principal Pharmacist

POISONS ACT AND REGULATIONS

Subsequent to the assent in November, 1974, to the Alcohol and Drug Authority Act, a system of liaison between this Branch and the Authority was instituted; abuse of drugs were now able to be directed to a body which specialised in the provision of supportive treatment and rehabilitation of addicts.

Close co-operation was maintained with the Pharmaceutical Council and the Pharmacy Guild in the reduction of stocks of drugs of addiction held by pharmacies, to minimise quantities of illicit drugs directed to illicit traffickers by theft.

PESTICIDES

Eighty six (86) submissions were received and examined in accordance with the national clearance scheme for clearance of pesticides in conjunction with the Technical Committee on Agricultural Chemicals. Seventeen (17) new chemicals and sixty four (64) proposals to use existing chemicals in present or modified formulations for new uses were cleared. Five (5) requests for clearance to use existing chemicals for new uses are under consideration.

The Western Australian Pesticides Advisory Committee approved one hundred and fifty six (156) formulations of pesticides for registration during 1975; four (4) were still under consideration at 31st December, 1975. Eighty five (85) registered formulations were cancelled or withdrawn during the year.

Eleven hundred and eighty nine (1 189) brands of formulations were registered as at 31st December, 1975.

Appendix IX

Dental Health Service

J.L. Prichard, Dip.D.S., B.D.Sc., F.I.C.D.
Principal Dental Officer.

This report covers the activities of the Dental Health Service for year ending 31st December, 1975.

1. CLINIC SERVICE

(a) Rural and Remote

(i) *Kimberley Region*

Regular clinics are maintained at:—
Wyndham, Derby and Broome

With visiting services to:—
Kununurra, Halls Creek, Fitzroy Crossing, Koolan Island, Kuri Bay and Missions at Kalumburu, Balgo Hills, Lombadina, Beagle Bay, La Grange and the Derby Leprosarium.

Major stations Sturt Creek, Gordon Downs and Nicholson are visited annually.

(ii) *North West Region*

Regular clinics are maintained at:—
Port Hedland, Dampier, Karratha, Wickham, Exmouth, Paraburdoo, Tom Price and Newman.

With visiting services to:—
Goldsworthy, Shay Gap, Onslow, Pannawonica, Wittenoom and Shark Bay

One new Dental Clinic, with a supporting Dental Therapy Centre, is sited at South Hedland.

(iii) *Southern Region*

Regular clinics are maintained at:—
Beverley, Three Springs, Margaret River and Ongerup.

With visiting services to:—
Morawa, Quairading, Brookton, Jerramungup and Gnowangerup.

In addition to the above services, mobile road clinics provide services to the Northern Agricultural (Dalwallinu), North East Goldfields (Laverton, Trans Line), East Pilbara (Marble Bar, Nullagine), Murchison and Gascoyne areas (Meekatharra, Cue, Mt. Magnet, Yalgoo), Southern Agricultural (Northcliffe, Cascade, Condingup).

One mobile clinic provides a regular dental service to Institutions and Camp Schools in and around the metropolitan area.

Table I shows the volume of treatment provided during the year.

(b) School Dental Centres

As at December 1975 there were 13 fixed centres in metropolitan primary schools and an additional 14 schools were feeding in to these centres.

Volume of treatment delivered:—
Courses of treatment commenced—14 062
Courses of treatment completed--13 044
Teeth restored—14 644
Teeth extracted—1 515

TABLE 1

ANNUAL SUMMARY OF TREATMENT—RURAL AND REMOTE CENTRES

Year ended 31st December 1975

	Teeth Extracted	Number of Teeth Restored										Completed Dentures							Pre-ventive
		Synthetic	Amalgam		Inlay	Crown Bridge	Completed R.C.T.	Dressing	X-ray	Prophylaxis	Minor Surgery	F.U.	F.L.	P.U.	P.L.	U/L.R.A.	Rebase	Repair	
			Single Surface	Compound															
Children	3 857	1 261	6 169	4 151	20	39	61	1 237	1 174	1 330	205	....	....	4	....	174	....	8	2 040
Adults	7 545	5 483	5 532	7 610	153	266	295	2 410	2 913	2 263	412	404	225	334	119	59	140	695	822
Total	11 402	6 744	11 701	11 761	173	305	356	3 647	4 087	3 593	613	404	225	338	119	233	140	703	2 862

(c) **Dental Therapy Training School**

Children from 19 schools in the vicinity of the training centre attended for preventive dental services.

Volume of treatment delivered:—

Number of children treated—3 383
Teeth restored—10 269
Teeth extracted—380

2. TRAINING COURSE FOR SCHOOL DENTAL THERAPISTS

First Year

This was conducted at West Perth (temporary accommodation).

60 trainees commenced their first year in February
1 trainee resigned for medical reasons
7 trainees resigned during the year
52 trainees satisfactorily completed the first year

Second Year

Second year trainees commenced clinical work on March 19th. Of 51 trainees who commenced 2nd year, 46 graduated on December 16th.

The other 5 trainees required extra tuition and will complete the course in 1976.

Acknowledgements

During the year a number of persons assisted with special areas of dental therapy training.

(i) Principal Psychologist, Mental Health Services, conducted the Human Relations Course—Mr. R. Smith.

(ii) Head of Division, Microbiology, State Health Laboratories Service, assisted in arranging and conducting the Microbiology practical classes—Dr. E. Mackay-Scollay, Mr. R. Fergie, Mr. M. Fogarty.

(iii) University of W.A., Department of Anatomy, assisted in Anatomy practical classes—Dr. J. McGeachie.

(iv) Health Education Council conducted a course in Health Education and topical social issues.

The assistance of these persons and organizations is appreciated.

3. BUILDING PROGRAMME

(a) The Training School at Mt. Henry was officially opened on May 12th 1975 by the Hon. Norman Baxter, M.L.C., Minister for Health.

(b) Building of the Warwick School commenced in June.

(c) The Administration Block containing lecture theatre and student amenities was commenced in October.

4. COMMUNITY DENTAL HEALTH PROGRAMME

The policy of giving dental health information to the community through the school system and various health agencies was continued in 1975. The organizations involved were as follows:—

1. *The School System*

1.1 Educational programme at Colleges of Advanced Education:

Churchlands College
Graylands College
Mt. Lawley College
Claremont College
Secondary Teachers College
W.A. Institute of Technology

1.2 Four in-service courses for teachers

2. *Student Nurses and Nursing Aides:*
   W.A. School of Nursing
   St. John's, Subiaco
   Sir Charles Gairdner
   Princess Margaret Hospital
   Port Hedland Hospital

3. *Child Care Organizations*
   3.1 NGALA Mothercraft Centre—Post Graduate Course, Mothercraft Course
   3.2 Pre-school Education Board—Child Care Certificate Course
   3.3 Child Health Service—Mature Age Child Health Course, Orientation Courses for School Nurses, In-service Education Courses

4. *Dental Personnel*
   4.1 Australian Dental Association—Post Graduate Course, Dental Assistants Course
   4.2 Perth Dental Hospital—Dental Nurses
   4.3 Mt. Lawley Technical School—Dental Assistants, Dental Technicians
   4.4 University of W.A.—Dental Science
   4.5 School Dental Therapy Training Scheme—Lectures and tutorials for 1st and 2nd year trainees.

5. *Other Health Groups*
   5.1 Bentley Technical School—Health Surveyors
   5.2 Health Education Council of W.A.—Auxilliaries Course
   5.3 Mt. Lawley High School—Canteen Supervisors Course

Dental Health Education programmes were carried out at all the schools involved in the School Dental Scheme—a total of 46 schools. These programmes included not only children but also Mothers' clubs, canteen committees, school staff and Parents' Associations. In addition, educational talks for parents of pre-school children were held at 72 pre-school centres.

5. TEACHING AIDS

Apart from supply of teaching aids for use in the School Dental Service, posters, slides, pamphlets and school canteen information were distributed in response to 74 written requests, and numerous telephone and personal enquiries. Three new series of educational slides for children, teachers and parents were produced.

6. DENTAL INSPECTION OF CHILDREN

Pre-school Education Centres

Number of centres visited—95
Number of children examined—5 239
Number of children requiring extraction of teeth—5
Number of teeth requiring extraction—11
Number of children referred for treatment—2 020

Rural and Remote Schools

Number of children examined—2 422
Number of children requiring treatment—900
Parents were advised regarding Government subsidy for dental treatment.

7. FLUORIDATION

There was no change in West Australia's fluoridation programme during 1975. About 70 per cent of the population is now serviced with water supplies containing adequate fluoride.

8. STAFF DISTRIBUTION AS AT 31st DECEMBER 1975

1. Administration		
Dental Officers	4	
Clerical & General	9	
Wages	5	
	—	18
2. Field Services		
2.1 *North Metropolitan Region*		
Dental Officers	1	
Dental Therapists	12	
Dental Clinic Assistants	7	
	—	20
2.2 *South Metropolitan Region*		
Dental Officers	1	
Dental Therapists	8	
Dental Clinic Assistants	5	
	—	14
2.3 *Country Region* (*South West*)		
Dental Officers	4	
Dental Therapists	....	
Dental Clinic Assistants	7	
	—	11
2.4 *Rural and Remote Region* (*North West*)		
Dental Officers	13	
Dental Therapists	2	
Dental Clinic Assistants	20	
	—	35
2.5 *Mobile and Relieving*		
Dental Officers	3	
Dental Therapists	....	
Dental Clinic Assistants	3	
	—	6
3. Dental Therapy Training School		
Dental Officers	10	
Tutor Dental Therapists	9	
Dental Nurses	12	
Dental Technicians	2	
Registrar	1	
Clerical and Others	6	
	—	40
Total staff		144

9. SUBSIDY TREATMENT

Assistance towards the cost of dental care was provided for children, pensioners and other adults. Weekly income and dependants are the principal factors in establishing elegibility.

A summary of treatment provided and subsidies paid under this scheme is shown in Table II.

TABLE II

SUBSIDY SCHEME

TREATMENT PROVIDED AND CLAIMS PAID FOR 12 MONTHS ENDING DECEMBER 31st 1975

Total Number of applications received—2 859
Applications received on behalf of—

	(1) No. eligible	(2) No. not eligible
Children	1 377	271
Pensioners	1 893	134
Others	15	33
Total	3 285	438

Total number of requests: (1) + (2)=3 723

MONTHLY SUMMARY OF CLAIMS PAID

	(3) Number	(4) Total $	(5) Subsidy $	(6) % of Total Fees	(7) Number Visits	(8) Number Fillings	(9) Number Extractions	(10) New Pros.	(11) Other Pros.	(12) Number SnF2	(13) Other Treats.
Children	1 263	46 141.39	37 566.79	81	3 502	3 024	850	22	22	162	1 359
Pensioners	1 652	146 910.31	125 159.99	85	4 852	1 546	1 521	1 136	437	33	1 216
Others	15	1 148.35	1 036.80	90	39	39	7	5	2	....	16
Totals	2 930	194 200.05	163 763.58	84	8 393	4 609	2 378	1 163	461	95	2 591

Appendix X

Nursing Administration Section

Miss M.E. Beard, D.N.A., F.C.N.A.,
Principal Matron

1. NURSING SERVICE

The trend noted in the last Report, of the increased availability of Registered Nurses and Registered Nursing Aides, has persisted this year, not only in the metropolitan area, but also in a number of country centres. Seasonal shortages however, occur in the Kimberley and North-West hospitals (less in Pilbara mining towns), and some in the Eastern Goldfields always need assistance from the Emergency Nursing Service.

1.1 Emergency Nursing Service

Once again this Service has proved indispensable in providing a source of experienced Registered Nurses for despatch to centres (hospitals, remote nursing posts) in need throughout the length and breadth of Western Australia.

There has been a steady stream of applicants as indicated by the following figures:—

Appointments 1/1/75—31/12/75	
6 months contract	23
12 months contract	28
Total	51

Number employed at 31/12/75: 50

1.2 Staff

Miss Caroline Clifton retired in September last after a lifetime of service to nursing in departmental and country board hospitals in Western Australia. For the last 28 years she was Matron of Harvey District Hospital.

Miss Dorothy Peacock (Director of Nursing, Narrogin Regional Hospital) died during the year, succumbing at last to an enemy she had faced stoically and with dignity over a number of years.

Miss J. Schuster who successfully completed the Nursing Administration Course at the College of Nursing, Australia in 1975, was appointed Matron-elect of the new Rockingham/Kwinana hospital, which is due to open in 1976.

Miss Rae Conway succeeded Miss Reid as Nursing Supervisor, Community Health Service.

Miss J. Keddie was appointed Nursing Supervisor, School Health Service in place of Miss J. Deane who resigned to return to New South Wales.

1.3 Community Nursing Services

Miss Mary Reid, D.N.A., was appointed as the first Director of Community Nursing, and her important role will be to co-ordinate and correlate the varied range of nursing activities in this sphere.

OCCUPATIONAL HEALTH DIVISION

Nursing Staff: Occupational Health Sister, Occupational Health Part-time Sister stationed at Kalgoorlie

Occupational Health Nurses in Western Australia were contacted with a view to forming an association. As a result the first meeting was held on the 25th May 1975. The Western Australian Occupational Health Nurses Association was formed, approximately 25 members with meetings held quarterly.

In October 1975, two-day workshops on education and training of Occupational Health Nurses were held in Adelaide, Melbourne, Brisbane and Sydney. The Workshops were conducted by the WHO/Regional Teacher Training Centre for Health Personnel, Hospitals and Health Services Commission. The Occupational Health Officer from Western Australia attended.

PERTH CHEST CLINIC

Staff Numbers: 1st January 1975 10.3/5 registered nurses
31st December 1975 12.3/5 registered nurses

As hospital stay is now quite short a considerable amount of the nursing staff's time is spent on home visits.

Patients are visited at least once a month and more frequently if there are any problems with the long term chemotherapy.

Work was planned to ensure that the Nurse who would be doing the home visits, visited the patient in hospital to establish an acquaintance.

SPECIAL TREATMENT CLINIC

Registered Nurse: 1st January 1975—2
31st December 1975—4

Most of the nursing in this section is undertaken at the Special Treatment Clinic. One of the above Nurses was employed through the Public Service Board as a Health Officer with the specific responsibility of contact tracing.

There has been a decreasing demand on her time for contact tracing in recent months; one reason for this is that clientele seem to be more aware and responsible about sending their contacts for a check up. In view of this, the Health Officer has found she has been undertaking more nursing duties.

CHILD HEALTH SERVICE

No. of staff at January 1st 1975—117 (includes 1 on study leave)
No. of staff at December 31st 1975—117 (includes 3 on study leave)
Appointments—27
Resignations—15
Retirements—10
Vacancies as at December 31st 1975—4 (2 city) (2 country)

Staff Movements

During 1975 the staff situation throughout the country centres remained in a continual state of flux. Service was maintained with the assistance of part-time staff who are married and resident in the various districts. One third of country staff complement are employed on a part-time basis.

Successful study weekends were arranged to co-incide with zone staff meetings and held at:—

Narrogin in April
Karratha in May
Bunbury in June
Albany in October

Refresher Week

A most successful Refresher Week was held in August with combined School Health and Child Health Centre staff attending. The venue at the University of Western Australia was rated most highly on the evaluations submitted by all who attended.

Post Basic Courses

24 Ngal-A Child Health Students, in conjunction with Child Health Services, successfully completed two six months study programmes.

Post Graduate Courses

Clinical experience was provided for 13 post graduate students undertaking the Diploma of Community Health Nursing.

Interstate Conference: Melbourne—July

Goals in Nursing Education—attended by Miss Chidlow and Miss Woolcott.

State Workshop Goals in Nursing Education—November—attended by Miss N. Chidlow, Miss F. Williams, Miss B. Sutton and Miss N. Woolcott.

CHILD HEALTH SERVICES—SCHOOL HEALTH SECTION

Staff: 1st January 1975	....	37	
31st December 1975	....	59	
Resignations	....	3	
Replacements	....	3	
New Staff	....	23	
Part time staff	....	28	high schools, disadvantaged schools, country centres
Full time staff	....	31	primary school, pre-school

1975 has seen many changes in the School Health Section, owing to the increase in staff and the different work load of the nurses. This year all nurses screening pre-school and school children performed a full medical examination, which included growth and developmental assessment, language skills and auscultation of the heart on all children not previously seen by the School Health Services.

The training programme for the nurses in the full physical examination occupied a period of two weeks, and took place both at headquarters in the form of lectures and discussions, and also a period of 7 days in the schools receiving practical instruction from the Medical Officers.

Developments during the year consisted of new appointments of staff as follows:—

1 Senior Nurse	....	....	to co-ordinate high schools and disadvantaged schools programme
8 Nurses	....	....	in metropolitan high schools
3 Nurses	....	....	in country high schools
2 Nurses	....	....	disadvantaged schools

The above nurses' salaries are funded by the Education Department through the Schools Commission.

A Pre-school Health Team consisting of:—

3 Nurses
1 Medical Officer
1 Social Worker

was also created to cater for the rapid growth of pre-schoolers in disadvantaged areas. All staff in this area were funded by the Children's Commission via the Australian Government.

The other 6 appointments were:
4 metropolitan primary schools areas
1 relieving nurse, and
1 country centre—all funded by the Western Australian Government.

Because of the new intake of staff, there were two orientation courses of four week's duration to cover all new aspects of the total health screening developed by this section.

COMMUNITY HEALTH SERVICES

		Registered Nurses	
Staff figures:	1st January 1975	113	includes all positions in administration education and the field
	31st December 1975	152	

	Registered Nursing Aides
1st January 1975	14
31st December 1975	16
	Assistants
1st January 1975	40
31st December 1975	47

1975 saw considerable development with Community Health Services and of the work undertaken by the nursing staff. The staff changes, the growth of the Service and the necessity to have staff available round-the-clock for nursing post and Flying Duties quickened the overall tempo of the work. In December the Nursing Outposts were being maintained with the help of Sisters from the Medical Department's Emergency Nursing Service.

Staffing the Royal Flying Doctor Service and the Nursing Outposts emphasised some problems in the Award under which the nurses were employed, and as an interim measure an Exigency Allowance was agreed by the Public Health Department and Public Service Board.

Flying

Responsibilities for this work were undertaken in January at Port Hedland and Wyndham. In both places re-organisation and public relations work was undertaken; despite this a number of teething problems occurred. There are now seven full time Flying Nurses; based in—Derby (2), Wyndham (2), and Port Hedland (3).

Courses undertaken—Diploma in Community Nursing

Six nurses graduated on April 30th 1975.

Miss J. Hicks	Mrs. H. Brandeth
Miss J. Bedford	Miss M. Hayes
Mrs. E. Pannter	Miss M. Spackman

Three Nurses commenced the course in February 1975—

Mrs. J. Rucks
Miss S. Harper
Miss M Fitzgerald

Master of Nursing Degree

Miss D. M. Warr completed the above degree in December 1975. The course was undertaken at the Department of Family and Community Nursing, University of Washington, Seattle, U.S.A.

Aboriginal Liaison Course

Six Field Assistants completed this course of two days a week for sixteen weeks.

Administrative Conferences

All Regional Nursing Supervisors, (Regional Medical Officers and Head Office and Administrative staff) attended working conferences at Salvatori House on the following dates:

3rd-7th February
5th-10th May
4th-8th August
27th-30th October

Interstate Conferences attended by Nurses

Miss J. Wishart—"Women's Health in a Changing Society"—Brisbane 25–29 August.

Mrs. L. Little (Field Assistant)—"Women's Health in a Changing Society"—Brisbane 25–29 August.

Miss J. Greenhalgh—"Goals in Nursing"—Sydney July 14–16

Miss M. Reid—"Goals in Nursing"—Sydney July 14–16

Miss M. MacDonald—"International Conference in Culture and Mental Health"—Sydney May-July 1975

Miss M. Kerr (Leonora)—"Community Development Workshop at Institute of Aboriginal Development"—Alice Springs 17–28 March—December 1975

State Conferences

State Conferences were held for trained nurses at Noalimba Migrant Hostel during the weeks September 8–12th and October 20–24th. Staff attended in two sections, half to one conference and the remainder to the next. The same programme was repeated for both. The guest speakers generously participated in the repeat programme and both conferences were most successful.

Various In-Service Education Programmes were conducted for field staff throughout the State by the Education Section.

2. NURSE EDUCATION

2.1 Post-graduate scholarships were awarded as follows:—

College of Nursing (Aust.,) Melbourne

Miss J. Schuster—Nursing Administration Diploma Course
Mrs. D. Botelho—Machado Nursing Administration Diploma Course

Department of Nursing, W.A.I.T.

Mrs. J. Savage—Nursing Education Diploma Course
Miss L. Barrett—Nursing Education Diploma Course
Miss B. O. Bateman—Community Health Diploma Course
Miss B. Gardiner—Community Health Diploma Course

Helen Bailey Scholarship 1975

Awarded to Mrs. Audrey Martens, Nurse, Educator—Department of Nursing, W.A.I.T. who plans an 8 weeks observation tour in January-February 1976 through the United Kingdom, Canada and the U.S.A. She will take particular notice of external programmes, with a view towards the establishment of such courses in the Department of Nursing, for the benefit of external nursing students, based in both urban and country areas.

2.2 **Government School of Nursing**

In accordance with the progressive policies pursued since inception, first as the Central School of Nursing in 1947, then with a change of name in 1955, the Government School of Nursing merged with the Royal Perth Hospital School of Nursing, to become the Western Australian School of Nursing on 1st July 1975. This autonomous institution marks a new era in nurse education in this State, and will provide a most comprehensive programme for student nurses using the clinical resources of departmental hospitals in urban and rural situations as well as Royal Perth Hospital.

The modern building (cnr. Hill and Wellington Streets) housing the new School was opened on 24th October 1975.

Staff members who completed service with the Government School of Nursing on 30th June 1975, and subsequently transferred to the Western Australian School of Nursing on 1st July 1975 are as follows:—

Miss M. P. Underwood—Diploma of Nursing Education (Formerly Principal/Administrator of G.S.N. and now Deputy Principal Nursing Educator, Western Australian School of Nursing).
Miss M. R. Baird—Diploma of Nursing Education
Miss P. Smart
Miss J. Dennis
Miss M. Bothwell

2.3 Nursing Aide Programme

Although some of the smaller Nursing Aide Schools of Nursing (Busselton, Katanning, Merredin) have been phased out, the programme continues to be available at Albany, Bunbury, Kalgoorlie, Narrogin, Derby and Port Hedland Regional Hospitals, Collie District Hospital, Mt. Henry (in association with the Mount Hospital) and Swan District Hospital.

Nurse Educator, Mr. W. A. Booker, D.N.E., was appointed to direct and supervise the Nursing Aide Course, with headquarters at Mt. Henry Hospital.

Relevant Nursing Aide figures for the year 1/1/75 to 31/12/75:—

(i) Commenced training—

Kalgoorlie Regional Hospital	41	
Mt. Henry Hospital (including 10 transfers from other programmes)	66	
Swan District Hospital	30	
Collie Hospital	10	
Port Hedland Regional Hospital	7	(including 1 transfer)
Derby Regional Hospital	10	
Albany Regional Hospital	25	
Narrogin Regional Hospital	17	
Bunbury Regional Hospital	19	
	225	

(ii) Completed 12 months training—

Kalgoorlie Regional Hospital	16	
Mt. Henry Hospital	9	
Swan District Hospital	31	(including 1 external student)
Collie District Hospital	8	
Port Hedland Regional Hospital	6	
Derby Regional Hospital	9	
Albany Regional Hospital	14	
Narrogin Regional Hospital	16	
Bunbury Regional Hospital	13	
	122	

(iii) Wastage—

Kalgoorlie Regional Hospital	9	
Mt. Henry Hospital	12	
Swan District Hospital	6	
Collie District Hospital	2	
Port Hedland Regional Hospital	1	
Derby Regional Hospital	1	
Albany Regional Hospital	4	
Narrogin Regional Hospital	4	
Bunbury Regional Hospital	6	
	45	

2.4 Goals in Nursing Education

National Conference Melbourne 14–16 July 1975, was attended by Miss E. L. Bohan, Deputy Principal Director of Nursing. Miss E. R. Taylor, Mr. D. Owen, Directors of Nursing, Northam and Kalgoorlie respectively, Miss N. Chidlow (Nursing Supervisor, Child Health) and Miss N. Woolcott, Child Health.

3. NURSING RECRUITMENT

3.1 Nursing Bursaries for students to complete 4th and 5th year secondary school, were awarded as follows:—

1974–75 (2 years)	122
1975–76 (2 years)	160
1974 (1 year)	16

3.2 **Nursing Employment Section**

Through the media of personal interview, telephone, telex and correspondence, appointments have been arranged and accurate information and advice dispersed. As well the management of relevant advertisements, staff records and numerous airline bookings has contributed to the volume of work handled in this Section.

3.3 **Nursing Recruitment and Publicity Office**

Activities have continued with the focus particularly on students in Junior and Senior High Schools and to a lesser extent in Primary Schools, by means of the following:—

Correspondence and personal interview
Film and television
Newspapers and Journals
Brochures, posters
Personal representation in metropolitan and country schools
Liaison with service organisations, parents, vocational guidance officers, etc.
Hospital tours for school children
Vacation schools for prospective nurses in co-operation with the Christian Nurses' Association.

4. HOSPITAL INSPECTIONS

Departmental	48
Country Board	41
Nursing Homes	215
Private General and Mid Hospital	12
	316

5. PRIVATE HOSPITALS (NURSING HOMES)

5.1 **Closures**

Craigie House, Mundaring	12 beds
Cromane Nursing Home, Bayswater	40 beds
Kareeba Nursing Home, Belmont	54 beds
Mount St., Emilies, Kalamunda	19 beds
	125 beds

5.2 **New Private Hospitals (General and Nursing Homes)—Extensions of Licences**

Melvista Nursing Home, Nedlands	30 beds
Hilroyd Nursing Home, Mt. Lawley	27 beds and 6 cots
Cambridge Hospital	51 beds
Bassendean Nursing Home	5 beds
Craigmont Nursing Home	1 bed
Joondanna Nursing Home	1 bed
Stirling Hospital	2 beds
	116 beds and 6 cots

63792—(10)

6. CONCLUSION

All members of the Nursing Service deserve commendation for maintaining high levels of nursing care in urban, rural and outback situations, but special recognition must be accorded to Mrs. M. Fricker (Director of Nursing, Regional Hospital, Port Hedland) and her staff for meeting the vicissitudes engendered by Cyclone "Joan" with an effective blend of courage and pragmatism.

Appendix XI

Division of Occupational Health

A.G. Cumpston, M.B., B.Sc., M.Sc., M.App.Sc.,
Director.

PNEUMOCONIOSIS IN THE MINING INDUSTRY

During 1975 8 089 men were medically examined for entrance into the mining industry. An additional 8 696 miners were re-examined and of these 302 were found to be suffering from silicosis. Thirty-five new cases of silicosis were discovered and this number expressed as a rate per 10 000 examinations is consistent with the lower incidence rates observed in recent years (Fig. 1).

Figure 1

Year	Total number of examinations	Incidence of new cases of silicosis	Rate per 10 000 examinations (silicosis)
1925–29	13 800	847	614
1930–34	19 600	380	194
1935–39	34 100	111	33
1940–44	29 000	238	82
1945–49	26 000	293	113
1950–54	29 400	274	93
1955–59	30 300	259	85
1960–64	36 377	409	112
1965–69	36 477	196	53
1970–74	24 122	119	49
1975	8 696	35	40

For the second successive year there were no newly diagnosed sufferers from tuberculosis.

In men who had previously worked in the Wittenoom asbestos mining industry there were four new cases of asbestosis and six new cases of mesothelioma.

In the iron ore mining industry operations have not been continued for a sufficient length of time to produce pneumoconiosis and no cases have been seen. The possibility that iron ore dust could produce respiratory symptoms was investigated. All iron ore miners over the age of 40 years and those known to have worked for three years or more in the industry were examined at Mt. Whaleback and Mt. Tom Price, and statistical samples of men were taken from the remainder of the work force in each place. There was no evidence that respiratory function in iron ore miners has been impaired by the inhalation of iron ore dust.

In the Kalgoorlie gold mines respiratory function tests were performed on underground workers. In both smoking and non-smoking men who had worked for more than 20 years in the goldmining industry there was a statistically significant increase in the prevalence of respiratory symptoms, when compared with those who had worked for a shorter time. However, the difference is not sufficient to cause a significant impairment of lung function.

Examination of 1 222 workers in other dusty trades including sandblasting and foundry work revealed no new cases of pneumoconiosis. In the sandblasting industry operations have been closely watched to ensure that protective equipment is properly maintained and the men are not exposed to excessive amounts of respirable silica dust.

INDUSTRIAL HYGIENE

Pesticides

During the year four commercial fumigating firms were registered and 104 companies were re-registered or registered as commercial pest control firms. Two hundred and seventy-five men were licensed as operators.

Following evidence of poisoning of a child in a dwelling subjected to fogging with residual pesticide and evidence of food contamination from fogging for cockroach control, action has been taken to eliminate the practice of fogging and misting with residual pesticides in dwellings and commercial food premises.

Assistance was given to the Technical Extension Service of the Education Department in running a course which was well received by the pest control industry. Twenty-one students passed the examination.

Lead Workers

Tests and supervision of men engaged in work involving exposure to lead were carried out in co-operation with the Department of Labour and also the Department of Mines. A total of 230 urine tests were carried out by the Government Chemical Laboratories to determine lead exposure. In addition a number of blood tests were carried out by the Public Health Laboratories. Ten air tests to measure lead levels in the work situation were carried out by the Government Chemical Laboratories.

Twelve workers were suspended temporarily from lead exposure as a result of the tests. These men were for the most part engaged in salvaging lead from batteries. Investigations are proceeding to determine improved methods of controlling this hazard.

Mercury

Air tests for mercury in mines and seven dental surgeries were carried out by the Chemical Laboratories. Also, seven men in the mining industry were examined and one man was shown to be exposed to excessive mercury levels.

Fluorine

Routine sampling of urine of men engaged in water fluoridation, as well as occasional visits to check safety precautions at the main reservoirs were carried out. Twenty-six urine tests were all within normal limits.

Vinyl Chloride

All factories engaged in extruding polyvinyl chloride were subjected to air testing for levels of vinyl chloride monomer in various situations. These tests were carried out on our behalf by officers of the Government Chemical Laboratories. They indicate that no employees are exposed to dangerous levels of this chemical.

Thallium

Laboratory workers in the mineral sands industry were found to be exposed to a thallium compound. Thirty-seven specimens of urine have been tested for thallium and recommendations made for improved techniques.

NOISE ABATEMENT

Community Noise

Some community noise problems are being specially studied with the object of determining acceptable noise standards and framing special regulations to control them. Noise from speedways, domestic and industrial appliances, power boats, construction and demolition sites are being considered.

Implementations of the Noise Abatement (Annoyance of Residents) Regulations, 1974, by local councils, with the assistance of the Public Health Department is progressing. Ten Council Health Surveyors have completed a special noise course arranged in conjunction with this Department and will shortly be gazetted as Noise Inspectors.

Educational/Technical Assistance

The provisions of advice on the techniques of noise measurement, noise control and the interpretation of legislation to local authorities, government bodies and private organisations has been continued and expanded. Lectures on these subjects have been given to nursing groups and local and country groups of Health Surveyors.

Industrial Noise

This Department has maintained its service to other Departments and private industry. Advice has been given concerning noise surveys, noise control and hearing conservation.

Noise level surveys were conducted and advice given to the persons concerned in the following organisations:

Jason Builder Products	Anodising plant
Main Roads Department	Office equipment
Collie Shire	Workshops
Police Academy	Motor bikes—testing speedometers
Cunderdin Pumping Station	
Passiona Bottling Co.	
Morley High School	
Balga High School	

Also, audiometric examinations were conducted on 908 employees, as indicated below:

W.A.G.R.	223
Collie Coal miners, new entrants	189
A.D.A. Inspectors	116
P.H.D.	33
Pederick and Co., Wagin	35
University Workshops	55
Passiona Bottling Co.	21
Kalgoorlie Mines	143
Wigmores	8
Morley and Balga Technical Teachers	14
Bradford Insulation	12
W.A. Nails	16
Mobil Oil	8
Public Works Department	15
Other individuals	20
Total	908

A noise laboratory containing facilities for the calibration of acoustical measuring equipment, noise analysis and domestic appliance noise measurement is being established within the Division of Occupational Health.

The Department is currently preparing draft regulations for noise control and hearing conservation in industry.

Occupational Health Nursing

Many enquiries were answered and over 300 routine visits were made to factories in 1975.

Liaison has been maintained with other nurses engaged in Occupational Health Nursing and an Association of Occupational Health Nurses has been formed. Meetings have been well attended and will be held quarterly. Community Health Nurses undertaking the Community Health Diploma Course were instructed in occupational health. Twenty-eight students spent one week at the Department attending lectures and making factory visits.

A Workshop on Occupational Health organised by W.H.O./Regional Teacher Training Centre for Health Personnel, Hospitals and Health Services Commission was attended in Adelaide in October.

KINETICS

Hospitals and Nurses

Lecture/demonstrations services were continued for nursing and other staff at:

Albany Regional Hospital
Bunbury Regional Hospital
Government School of Nursing
Kalgoorlie Regional Hospital
Mental Health Services
Mt. Henry Hospital
Pre-Nursing Vacation School
Royal Perth Hospital
Swan Districts Hospital
Warren Districts Hospital

Ad hoc assistance was extended to the following:

Alfred Carson Hospital
Busselton Hospital
Carnarvon Hospital
Exmouth Hospital
Moora Hospital
Mental Health Services
Northam Regional Hospital
Onslow Hospital
Ravensthorpe Hospital
Royal Perth Hospital
St. George's Hospital
Sunset Hospital
Wongan Hills Hospital
Yarloop Hospital

A training aid "Techniques of Moving Patients in Hospital" was created in conjunction with Royal Perth Hospital. This will be available for distribution in February 1976 through the Civilian Maimed and Limbless Association.

Industry

A small handbook was created for a three day course in "Handling" given to Forestry Department Officers at Harvey. Preparatory work for similar courses in 1976 has been undertaken on behalf of—

Alcoa of Australia (W.A.) Ltd., Pinjarra.
Australian Postal Commission.

Assistance with individual problems was provided for the following:

Australian Broadcasting Commission
Alcoa of Australia (W.A.) Ltd., Kwinana
Blue Cross Products Pty. Ltd.
Department of Corrections
A.G. Green Pty. Ltd., Harvey.

One or more lectures were given to:

Agricultural College, Harvey
Canteen Supervisors, Mt. Lawley Technical College
Community Health Services
Department of Design, W.A. Technical Institute
Furniture Design, Leederville Technical College
Graduate Diploma Course, W.A. Technical Institute.

STAFF CHANGES

During the year Dr. A. G. Cumpston became Director (July, 1975).
Sister C. Ace was appointed on a part-time basis in August 1975 in Kalgoorlie.

EDUCATION AND OTHER ACTIVITIES

In addition to previously stated activities the Division chaired or was represented on the following:

National Health and Medical Research Council Occupational Health Committee.
Air Pollution Control Council and Scientific Advisory Committee
Pneumoconiosis Medical Board
Noise and Vibration Control Council and Noise Abatement Advisory Committee
Poisons Advisory Committee
Electrical Safety in Hospitals Committee
Mines Ventilation Board.

Lectures, demonstrations, seminars, etc. were given to many groups including medical students, health surveyors, industrial groups, community health nurses, safety officers, etc.

CLEAN AIR SECTION

The activities of the Section are included under the following headings:—

A.—MONITORING OF AIR POLLUTANTS.
B.—SPECIFIC INVESTIGATIONS AND TESTING.
C.—ADVISING ON AIR POLLUTION CONTROL COMPLAINTS.
D.—EDUCATION.
E.—STATUTORY DUTIES.

A.—MONITORING OF AIR POLLUTANTS

1. Dust Monitoring

The Central Electricity Research Laboratory directional dust gauge (C.E.R.L.), and the standard New South Wales glass funnel deposit gauge are used in Western Australia.

Perth Area

Twenty-five C.E.R.L. dust gauges were used in the metropolitan area during 1975, 3 gauges in the Welshpool/Kewdale area were withdrawn and 3 new gauges sited in the Wanneroo area at the request of the Wanneroo Shire Council. The locations of the Public Health Department C.E.R.L. gauges as at December, 1975 were:—

City Beach
East Perth
Lathlain Park
Welshpool (1)
Kewdale (2)
Perth Airport
Naval Base
Coogee
Maddington (2)
Rivervale (4)
Jandakot (4)
Wanneroo (3)

For results see Appendix A.

The deposit gauge located at Lathlain Park was transferred to Perth Airport during 1975 and the gauges at City Beach, East Perth and Welshpool maintained as previously. The results from the deposit gauges are shown in Appendix B.

Port Hedland

Eleven dust gauges were maintained in Port Hedland during 1975. Officers of the Shire of Port Hedland have continued to collect the dust gauges and forward them to the Section's laboratory in Perth for processing. The dust samples for each site have been analysed for iron and manganese expressed as Fe_2O_3 and MnO_2 every second month. For results see Appendix C. Cyclone Joan damaged every gauge in early December, subsequently the November and December samples were lost. In November 3 high volume samplers were installed in Port Hedland and run on a statistical basis, being operated every sixth day. The Division wishes to thank Mt. Newman Mining Company, Goldsworthy Mining Company, Leslie Salt Company and the Shire of Port Hedland for the most necessary assistance to initiate this new dust monitoring programme.

High Volume Sampler	*Location*
1	Port Hedland Town near Customs Office
2	Port area near Leslie Salt
3	Parker Street, South Hedland
4	Swimming Pool, Spinifex Hill

For results see Appendix D.

Cape Lambert/Dampier

During 1975 two new gauges were installed in the area, one at Karratha Airport and the other at Karratha townsite. The Health Surveyor, Shire of Roebourne has continued to collect the samples and maintain the gauges in the area and forward the samples to Perth for processing and chemical analysis. All the dust gauges were damaged by Cyclone Joan and the samples for November and December were lost. For results see Appendix E.

Esperance

The dust survey in the Esperance Port Authority area was continued in 1975.

The samples are collected by the Esperance Port Authority and forwarded to this Section's laboratory in Perth for processing. The dust samples are analysed for nickel content and the results are expressed as per cent pentlandite.

For results see Appendix F.

Kalgoorlie

The dust survey in and around Kalgoorlie and Boulder was continued during 1975. The samples are collected and the gauges maintained by the health surveyors for both local authorities and the samples forwarded to the Section's Perth laboratories for processing. For results see Appendix G.

Chemical analyses of the dust samples have been carried out by the Government Chemical Laboratories.

2. Sulphur Dioxide and Particulate Monitoring

Perth Area

Monitoring for sulphur dioxide and particulates has continued in the metropolitan area. In July monitoring at Bayswater, North Fremantle and two sites, continued from the Coogee Area pollution study, were discontinued. Surveillance in the residential areas continues to show that in Perth the measured levels of sulphur dioxide are extremely low. The Division wishes to thank the residents of many areas who have volunteered to assist the Section in having and operating these sampling stations in their own homes. For results see Appendices H and I.

Australind

Following 12 months continuous monitoring for sulphur dioxide and smoke particulates near to the titanium dioxide manufacturing plant the equipment was withdrawn at the end of June. The results of the year's monitoring, see Appendices J and K, showed the levels of sulphur dioxide and smoke to be extremely low.

Kalgoorlie

Monitoring for sulphur dioxide has continued from a site near the centre of the town during 1975.

For results see Appendix L.

3. Oxides of Nitrogen Monitoring

Sampling sites operating on a 24 hour time base located at Claremont, Crawley and Perth have been operated throughout the year. For results see Appendix M.

4. Ozone Monitoring

During the year ozone monitoring was continued at 57 Murray Street. For results see appendix N.

5. Hydrogen Sulphide Monitoring

Hydrogen sulphide is measured at a single site on the boundary of a nickel refinery at Kwinana. Although the odour of the sulphide is still occasionally noticeable, the measured concentrations are generally very, low, as shown in Appendix O.

Motor Vehicles

Surveys for monitoring pollutants emitted from motor vehicles have continued under the following categrories:—

1. Pedestrian exposure tests, measured on the footpath at locations throughout the city (See Fig. 2 and Appendix P).
2. 24 hour exposure test, measured in the city at 57 Murray Street, Perth. Results are shown in Appendices Q and R.
   Lead was determined at 57 Murray Street, Perth on a regular basis. For results see Appendix S.

B.—SPECIFIC INVESTIGATIONS AND TESTING

1. Fluorine

Superphosphate Works

The six superphosphate manufacturing plants were not tested during the year for fluorine emissions due to other demands on the Section. Measurements at each works will be made early in the new year.

Brickworks

The intensive monitoring programme utilising static monitoring and continuous monitoring with more detailed meteorological observations was again initiated for the 1975/76 grape growing season in the Midland area. Up until December, 1975 vegetation damage was slight following the installation of further dry scrubbers on the kilns at the nearby brickworks. The results for the entire growing season will be issued in a separate report.

2. Tracer Experiments

In co-operation with the Department of Conservation and Environment and the Bureau of Meteorology the Clean Air Section undertook tracer experiments at an alumina refinery near Pinjarra. The object of the tests was to verify classical dispersion formulae used in modelling the plumes from the boiler chimneys. Tests were conducted in April, November and December.

3. Miscellaneous

The Clean Air Section continued to assist other Government Departments, Local Authorities and private companies when called on throughout the year.

C.—ADVISING ON AIR POLLUTION CONTROL COMPLAINTS

The number of written and telephoned compliants was similar to that of previous years. Complaints from a cement works in Rivervale diminished noticeably but an increased number of complaints were received about a cement works in South Coogee. Most complaints still arise from the unfortunate siting of certain industries relative to nearby residential areas.

Advice

Numerous enquiries were received by the Section from members of the public and students for information and materials for projects.

D.—EDUCATION

Lectures were given during the year at Mt. Lawley Technical School, the Western Australian Institute of Technology, and to various professional organisations.

E.—STATUTORY DUTIES

All meetings of the Scientific Advisory Committee, of which the Director of Occupational Health and Clean Air is Chairman, were attended. Numerous reports have been prepared for the Committee by the Senior Engineer and his staff.

Members of the staff continue to represent the Department and Department of Conservation and Environment on National and State bodies. Surveillance, statutory duties and the rendering of necessary assistance to the Council and various committees have continued to increase the Section's work load.

APPENDIX A

DUST TESTING PROGRAMME—PERTH METROPOLITAN AREA 1975

MEAN TOTAL DIRTINESS FOR THE TWELVE MONTHS PERIOD JANUARY—DECEMBER 1975

Gauge	Total Dirtiness
City Beach	1·1
East Perth	2·3
Lathlain Park	1·7
Welshpool 1	3·6
*Welshpool 2	4·3
*Welshpool 3	2·6
Kewdale 1	4·3
**Kewdale 2	3·6
Kewdale 3	4·5
Perth Airport	2·2
Naval Base	4·7
Coogee 2	6·1
Maddington 1	6·9
Maddington 2	5·0
Rivervale	2·9
Rivervale 1	2·5
Rivervale 2	5·4
Rivervale 3	3·7
Jandakot 1	2·3
Jandakot 2	4·9
Jandakot 3	3·1
Jandakot 4	1·9
*Wanneroo 1	1·5
*Wanneroo 2	2·0
*Wanneroo 3	2·6

* 5 months only
** 6 months only

APPENDIX B

DEPOSIT GAUGES 1975

DEPOSITION (milligrams per square metre per day)

Sampling Point	Total Insolubles	Total Inorganic
*Belmont	20	12
City Beach	36	26
East Perth	89	62
**Lathlain Park	48	23
Welshpool	34	29

* 4 months only
** 5 months only

APPENDIX C

1975—DUST TESTING PROGRAMME—PORT HEDLAND

Gauges	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.	
	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%
1	22·2	....	28·1	70	11·5	....	13·1	65	19·9	....	20·2	24	20·9	....	12·6	56	13·4	....	18·6	59	*	....	*	....
2	19·2	....	26·5	59	8·6	....	5·1	52	11·1	....	9·9	57	10·8	....	6·2	53	9·9	....	10·7	59	*	....	*	....
3	12·2	....	11·8	32	2·8	....	2·4	....	2·8	....	2·7	56	2·2	....	4·1	25	5·6	....	3·1	....	*	....	*	....
4	7·0	....	13·2	22	2·6	....	1·4	15	1·4	....	3·4	20	2·9	....	1·6	10	....	....	3·1	27	*	....	*	....
5	9·9	....	8·3	19	3·2	....	1·8	19	3·2	....	10·1	22	5·7	....	4·1	25	8·3	....	3·8	28	*	....	*	....
6	19·6	....	18·6	62	26·3	....	23·9	72	13·9	....	25·4	65	27·8	....	9·2	75	13·9	....	14·9	68	*	....	*	....
7	8·3	....	12·2	21	5·7	....	4·9	49	2·4	....	4·2	40	3·2	....	3·1	36	7·5	....	3·4	....	*	....	*	....
8	8·2	....	12·9	41	6·4	....	9·9	70	11·9	....	6·8	67	7·7	....	4·8	63	7·1	....	5·2	49	*	....	*	....
9	5·4	....	7·1	8	5·5	....	2·2	14	4·2	....	6·4	....	....	....	....	....	....	....	....	....	*	....	*	....
10	30·5	....	27·6	77	74·6	....	56·6	77	51·3	....	26·6	64	63·3	....	....	....	5·5	....	....	....	*	....	*	....
11	8·4	....	5·3	17	4·9	....	2·1	29	1·2	....	0·9	20	1·1	....	6·1	25	5·6	....	3·3	9	*	....	*	....

% = Per cent Iron Ore in Total Dust from Gauge
T.D. = Total Dirtiness
* = Cyclone Damage

APPENDIX D

HIGH VOLUME DUST SAMPLING—PORT HEDLAND

(all results in micrograms per cubic metre)

Date	Sampler			
	1	2	3	4
4/11/75	350	....	55	....
10/11/75	674	116	36	....
16/11/75	250	528	....	....
22/11/75	....	284	38	....
28/11/75	....	39	34	....
4/12/75	....	....	63	60

APPENDIX E

1975—DUST TESTING PROGRAMME—CAPE LAMBERT/DAMPIER

Gauge	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.	
	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%	T.D.	%
1	....	....	....	....	12·5	....	5·1	....	4·0	....	6·3	....	5·2	....	2·6	....	1·7	....	2·9	....	*	....	*	....
2	....	....	....	....	13·2	....	8·2	....	9·3	....	17·6	....	9·5	....	2·7	....	2·4	....	2·1	....	*	....	*	....
3	....	....	....	....	2·3	....	1·6	....	1·7	....	2·6	....	2·3	....	1·0	....	1·6	....	1·1	....	*	....	*	....
4	....	....	....	....	....	....	2·7	....	1·2	....	2·4	....	1·3	....	1·2	....	1·4	....	1·6	....	*	....	*	....
5	....	....	....	....	35·1	53	4·8	....	4·1	31	10·3	68	9·4	57	8·0	75	4·3	35	4·4	17	*	....	*	....
6	....	....	....	....	11·8	29	3·4	33	4·7	63	4·6	37	3·9	29	3·7	31	11·6	72	5·9	71	*	....	*	....
7	....	....	....	....	1·5	14	2·2	17	1·4	17	2·8	9	4·5	15	1·8	....	1·4	18	1·3	16	*	....	*	....
8	....	....	....	....	2·8	3	1·6	....	3·4	6	3·5	16	3·8	....	1·8	16	....	....	12·8	8	*	....	*	....

Gauges—1, 2, 3, 4 Cape Lambert
5, 6 Dampier
7, 8 Karratha

T.D. = Total Dirtiness
% = Per cent Iron Ore in Total Dust from Gauge
* = Cyclone Damage

APPENDIX F

ESPERANCE PORT AUTHORITY DUST SURVEY 1975

Gauge	Jan.		Feb.		March		April–May		June		July		Aug.–Oct.	
	T.D.	%NiS	T.D.	%NiS	T.D.	NiS%	T.D.	%NiS	T.D.	%NiS	T.D.	%NiS	T.D.	%NiS
1 W		....		1·95		0·73		0·82		0·73		0·46		0·09
S	....	....	3·5	1·82	2·9	0·86	1·2	0·09	0·7	0·64		0·46	1·0	0·36
E		....		2·36		1·55		*		5·92		....		0·27
N		....		1·86		1·05		0·09		0·36		0·41		0·14
2 W		0·18		1·23		0·82		*		0·27		0·18		0·05
S	2·4	0·14		0·59	1·2	0·36	0·5	*	1·6	0·68	1·7	0·41	0·5	0·05
E		1·18		1·41		0·95		*		0·14		0·77		0·18
N		0·27		0·73		0·36		*		0·36		0·14		....
4 W		0·05		0·14		0·14		*		0·50		0·09		0·09
S	3·1	0·18		0·23	1·5	0·23	0·5	*	1·3	0·18	1·4	0·14	0·4	0·09
E		0·14		0·23		0·18		*		0·23		0·18		*
N		0·14		0·23		0·18		*		0·23		0·09		*

T.D. = Total Dirtiness
%NiS = % 2FeS NiS (Pentlandite)
* = Less than 0·09%

APPENDIX G

1975—DUST TESTING PROGRAMME—KALGOORLIE

Monthly Total Dirtiness

Gauge	Jan.–Mar.	April	May	June–July	Aug.–Sept.	Oct.–Nov.
1	21·4	13·9	9·1	3·8	6·2	10·7
2	6·9	1·6	3·9	1·3	1·9	4·6
3	21·7	20·5	8·9	9·1	5·4	23·2
4	....	....	....	....	....	....
5	....	....	2·3	....	....	....
6	9·4	3·2	2·3	0·8	1·4	....
7	1·9	1·7	2·2	0·9	1·0	1·8
8	1·8	0·3	0·9	0·3	0·5	0·9
9	....	....	....	....	....	....
10	....	....	2·3	1·9	2·5	2·4
11	4·9	1·1	1·5	0·6	1·3	....
12	17·8	1·3	2·7	1·3	1·1	....

APPENDIX H

METROPOLITAN SULPHUR DIOXIDE CONCENTRATIONS 1975

(All results expressed in Micrograms per cubic metre)

AVERAGES

Site	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Seven Highest 24 hr Values for Year							Annual Average
Perth	11	16	12	16	13	12	8	18	11	14	14	15	78	67	66	60	58	52	52	13
Banyanup	2	2	4	2	2	1	1	1	3	4	8	5	29	27	24	23	22	20	20	3
Bayswater	5	4	3	2	3	2	....	....	....	....	....	....	38	30	16	15	15	13	13	....
Bentley	5	3	2	2	2	3	3	3	3	3	3	6	45	29	24	20	19	18	18	3
Claremont	5	3	3	2	2	2	3	4	5	5	10	4	43	28	26	26	25	20	18	4
Inglewood	9	3	3	1	1	3	1	2	2	3	6	7	37	35	30	30	28	27	20	3
Jandakot	3	1	1	1	2	1	....	....	....	....	....	....	25	10	10	8	7	6	6	....
Kardinya	4	0	1	1	1	1	2	2	2	3	3	4	42	17	13	9	6	6	5	2
Medina	6	2	2	7	4	3	6	5	7	5	3	3	69	47	43	43	42	39	38	4
Nedlands	3	3	4	2	4	3	2	4	3	6	8	7	29	21	18	17	16	16	16	4
North Fremantle	11	6	9	5	2	5	....	....	....	....	....	....	44	38	33	33	28	27	25	....
Orelia	14	1	2	11	2	3	2	1	3	4	4	2	223	48	30	30	29	29	27	4
South Coogee 2	65	18	13	3	2	1	....	....	....	....	....	....	165	153	149	146	140	124	119	....
Wembley Downs	2	4	2	1	1	1	0	1	1	2	4	3	64	15	14	12	12	12	10	2

APPENDIX I

METROPOLITAN SMOKE READINGS 1975

(All Results in Micrograms per cubic metre)

AVERAGES

Site	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Average
Perth	4	3	3	4	11	7	6	5	5	4	4	3	5
Banyanup	1	1	2	2	3	2	1	1	1	1	2	2	2
Bayswater	3	4	3	5	8	10	....	....	....	....	....	....	....
Bentley	0	0	1	1	5	4	3	3	2	2	2	1	2
Claremont....	1	1	1	1	4	4	3	4	6	4	1	3	3
Inglewood	2	2	4	6	5	6	4	4	4	4	3	4	4
Jandakot	0	0	0	0	1	1	....	....	....	....	....	....	....
Kardinya	1	1	1	2	2	1	1	1	1	2	3	2	2
Medina	2	1	1	1	3	2	2	2	3	1	2	2	3
Nedlands	1	2	1	1	3	1	2	2	7	1	1	1	2
North Fremantle	2	3	2	1	4	1	....	....	....	....	....	....	....
Orelia	2	2	1	1	3	1	1	1	3	1	1	1	2
South Coogee 2	0	0	0	0	0	0	....	....	....	....	....	....	....
South Coogee 6	0	0	1	1	1	....	....	....	....	....	....	....	....
Wattleup	1	4	1	2	3	2	0	1	1	1	1	1	2
Wembley Downs	2	2	4	5	6	4	3	2	4	2	3	3	3

APPENDIX J

AUSTRALIND SMOKE READINGS 1975

(All results expressed in micrograms per cubic metre)

AVERAGES

Site	January	February	March	April	May	June
No. 1	1	0	1	1	1	0
No. 2	1	1	2	2	1	1

APPENDIX K

AUSTRALIND SULPHUR DIOXIDE CONCENTRATIONS 1975

(All results expressed in micrograms per cubic metre)

AVERAGES

Site	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Seven Highest 24 Hour Values for Year						
No. 1	11	19	6	1	1	2	....	....	....	....	....	....	156	138	42	41	36	34	34
No. 2	21	30	28	6	4	11	....	....	....	....	....	....	185	173	169	103	87	82	74

The monitors were removed at the end of June, after 12 months continuous monitoring had been completed.

APPENDIX L

SULPHUR DIOXIDE—KALGOORLIE—1975

(Micrograms per cubic metre)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Monthly Average	12·3	2·6	1·1	....	0·9	12·2	1·4	10·8	6·5	6·3	16·5	12·0
Maximum Daily Average	86	20	26	....	9	43	46	168	80	86	117	80
Minimum Daily Average	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Hourly Average	830	290	230	....	110	460	630	2 170	490	400	1 540	1 000
Minimum Hourly Average	0	0	0	0	0	0	0	0	0	0	0	0

1975 Average 7·5 μgm^{-3}

APPENDIX M

METROPOLITAN OXIDES OF NITROGEN CONCENTRATIONS 1975

(All results expressed in micrograms per cubic metre)

Site	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest 24 Hour Average	Lowest 24 Hour Average	Average
Perth—															
57 Murray Street	12	16	24	41	59	65	62	66	59	66	56	57	174	0	49
Claremont—															
Cnr. Queenslea Drive and Stirling Highway	15	26	27	45	73	95	86	72	56	45	43	41	289	0	52
Nedlands—															
Thomas Street	8	19	27	18	30	53	32*	35*	22*	29*	22*	57*	182	0	29

* NO_2

APPENDIX N

OZONE—57 MURRAY STREET, PERTH

(Micrograms per cubic metre)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Monthly average	40·6	33·5	34·9	20·4	11·6	16·9	31·6	19·2	28·8	26·3	22·7	19·8
Maximum Daily Average	68·6	94·1	45·8	49·0	35·3	45·1	72·5	78·4	58·8	43·1	33·7	25·5
Maximum Hourly Average	196	294	147	59	78	118	118	39	118	59	137	69

1975 Average = 25·5 μgm^{-3}

APPENDIX O

HYDROGEN SULPHIDE—KWINANA—1975

(Micrograms per cubic metre)
(Measured 10 metres from source)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Monthly Average	0·29	1·07	1·65	0·30	0·63	0	0	1·65	0	0·60	0	0
Maximum Daily Average	6·0	22·5	15·0	1·5	10·5	0	0	31·5	0	9·0	0	0
Maximum 3 hourly average	30	150	60	15	30	0	0	135	0	30	0	0
Minimum daily and 3 hourly averages	0	0	0	0	0	0	0	0	0	0	0	0

1975 Average 0·52 μgm^{-3}

APPENDIX P

PEDESTRIAN EXPOSURE TESTS—PERTH CITY BLOCK—1975

Date	Site No.	Carbon Monoxide			Total Hydrocarbons		Nitrogen Oxides 10 hour Average	Lead 10 hour Average	Benz-*a*-Pyrene 10 hour Average	Particulates 10 hour Average
		10 hour Average	Max. 8 hour Average	Max. 1 hour Average	10 hour Average	Max. 1 hour Average				
		p.p.m.	p.p.m.	p.p.m.	p.p.m.	p.p.m.	μgm^{-3}	μgm^{-3}	μgm^{-3}	μgm^{-3}
22/1/1975	11	....	....	....	0·7	0·8	39	0·7	0·07	96
31/1/1975	13	11·0	11·0	13·0	2·7	2·8	119	6·9	0·65	286
6/2/1975	9	20·0	19·0	24·0	1·7	2·0	42	4·6	0·62	149
13/2/1975	5	5·0	5·0	24·0	1·9	2·8	96	8·1	0·15	149
20/2/1975	4	3·0	3·0	5·0	1·5	1·7	24	2·9	0·15	135
7/3/1975	15	11·0	12·0	25·0	....	....	67	....	....	....
14/3/1975	11	5·0	6·0	7·0	....	....	16	2·6	0·16	107
27/3/1975	7	8·0	9·0	13·0	3·0	3·8	27	3·1	0·15	97
17/4/1975	2	9·0	9·0	10·0	2·1	2·8	131	6·9	0·87	94
3/5/1975	9	7·0	7·0	10·0	1·8	2·5	63	....	....	....
17/5/1975	5	9·0	9·0	17·0	1·6	2·8	107	4·8	0·63	137
23/5/1975	8	3·0	4·0	7·0	....	....	51	4·2	0·56	118
25/7/1975	13	11·0	9·0	17·0	....	....	220	22·8*	8·41*	282
1/8/1975	4	2·0	2·0	3·0	2·6	4·0	31	1·1	0·55	198
19/9/1975	11	2·2	2·1	4·5	2·4	3·0	29	2·8	0·25	149
26/9/1975	9	3·1	3·0	4·5	....	....	54	4·0	0·38	126
24/10/1975	15	6·4	6·2	9·5	....	....	155	8·7	0·69	218
30/10/1975	7	2·9	2·5	5·0	....	....	111	3·7	0·22	87
Best Averages	....	7·0	....	....	2·0	....	77	5·5	0·91	152

* These readings were obtained on a calm day at a site close to a bus stop where buses idle for prolonged periods.

APPENDIX Q

CARBON MONOXIDE IN PARTS PER MILLION—1975

Sampled at 57 Murray Street, Perth

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Average	1·1	1·1	1·4	0·7	1·1	1·0	2·8	1·6	0·7	0·6	0·4	0·7
Maximum Daily Average	2·5	2	2·5	1·5	2·3	2·5	3·7	2·8	1·8	1·0	1·4	1·8
Maximum 8 hour Average	5	3	3	2	4·3	5·4	5·6	3·9	2·2	2·8	2·9	2·2
Maximum Hourly Average	6	4	6	3	10	14	9	6	4·5	5	3·5	3

1975 Average 1·1 p.p.m.

APPENDIX R

TOTAL HYDROCARBONS IN PARTS PER MILLION—1975

Sampled at 57 Murray Street, Perth

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Average	1·1	1·1	1·1	1·4	1·5	1·6	1·7	1·9	1·8	1·6	1·4	1·2
Maximum Daily Average	1·4	1·4	1·5	1·8	2·2	2·3	2·6	2·3	2·4	2·3	2·0	1·6
Maximum 3 Hour Average 6.00 a.m. to 9.00 a.m.	1·4	1·5	1·7	2·5	2·8	2·4	2·6	2·8	3·4	3·1	2·5	1·8
Maximum Hourly Average	1·9	2·3	1·8	4·7	7·7	5·4	4·5	3·8	3·6	3·4	2·8	2·0

1975 Average 1·5 p.p.m.

APPENDIX S

24 HOUR EXPOSURE TESTS TAKEN AT 57 MURRAY STREET, PERTH 1975 (OUTER CITY)

(Lead expressed in micrograms per cubic metre)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Monthly Average	0·7	0·6	0·5	0·8	0·8	1·3	1·2	1·2	0·8	0·7	0·5	0·3
Highest 24 Hour Average	2·3	1·2	1·7	1·7	1·7	4·7	2·2	2·4	1·2	1·5	0·9	0·7
Lowest 24 Hour Average	0·1	0·1	0·1	0·4	0·5	0·6	0·4	0·5	0·4	0·2	0·1	0·1

Yearly Average .... 0·8
Yearly Highest Average 24 Hour Sample .... 4·7
Yearly Lowest Average 24 Hour Sample .... 0·1

Height of sampling point above road surface—3m.
Distance of sampling point from centre line of road—24m.
Method of sampling—low volume continuous filter.

Appendix XII

State X-Ray Laboratory

B.E. King, M.Sc., B.Sc.
Physicist in Charge

INTRODUCTION

Since 1963, the Physics Division of the Laboratory has been responsible to the Radiological Advisory Council for the administration of the Radioactive Substances Act. Prior to the establishment of the Division in 1963, officers of the Laboratory assisted the Council in its work. During 1975, the Division continued to provide the secretarial, administrative and technical facilities necessary for the administration of the Act. In addition, users of ionising and non-ionising radiation are provided with advice on radiation physics and radiation protection, and with a calibration service for X-ray equipment and radiation measuring instruments. The Division conducts an educational programme for users of radiation and provides a film badge radiation monitoring service.

The work of the Radiological Advisory Council and the Physics Division of the State X-Ray Laboratory is described in more detail in succeeding sections of this report.

LEGISLATION

The Radioactive Substances Act, which was passed in 1954 and subsequently amended in 1960 and 1964, requires users of X-ray equipment and radioactive substances to be licensed. Medical practitioners and dentists who do not carry out fluoroscopy do not require a licence, but must register their equipment. A licence or registration is granted by the Minister for Health who is advised by the Radiological Advisory Council. The Council is an expert committee representing professions with special knowledge of the effects and uses of ionising radiation.

At the close of 1975, the composition of the Council was as follows:

Chairman: Dr. J. C. McNulty—Commissioner of Public Health and Medical Services

Members: Professor D. J. Allen-Williams—Engineer
Professor W. Simmonds—Physiologist
Dr. E. Maslen—Physicist
Dr. J. Glancy—Radiologist
Mr. R. Fimmel—Water Supply Engineer

The Council has three sub-committees which advise it on medical, dental and chiropractic uses of ionising radiation respectively. During 1975, the Council held

TABLE 1—LICENCES AND REGISTRATIONS

	Radioactive Substances	X-Ray
Licences current at 31st December 1975		
Medical and Dental	16	142
Non-Medical	142	93
Total	158	235
Registrations current at 31st December 1975		
Medical	....	34
Dental	....	258
Total	....	292

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four meetings, the Medical Advisory Committee four, the Dental Advisory Committee one and the Chiropractic Advisory Committee three. Table 1 shows the number of licences and registrations in effect on 31st December, 1975.

The figures in Table 1 cannot be compared with those for previous years, since during 1975 the issuing of joint licences for the use of Radioactive Substances and Irradiating Apparatus was discontinued, and separate licences were granted for each category. However, Table 2 shows the number of new licences and registrations recorded during 1975.

TABLE 2—NEW LICENCES AND REGISTRATIONS APPROVED DURING 1975

	Radioactive Substances	X-Ray
Licences:		
Medical and Dental	1	11
Non-Medical	48	16
Total	49	27
Registrations:		
Medical	....	1
Dental	....	24
	....	25

The Radiation Safety Act was passed by Parliament in August, 1975, and is to be proclaimed early in 1976. The regulations under the existing Radioactive Substances Act will remain in force under the new Act until new regulations are gazetted.

There is provision under the Radiation Safety Act to control the use of "electronic products" which emit radiations not controlled by the previous Act, viz. non-ionising, electromagnetic radiation, or particulate radiation, or sonic, infrasonic or ultrasonic waves. Microwave and other radio-frequency generating apparatus, lasers, sources of ultraviolet light, etc. can be prescribed so that they come within the provisions of the Act. Another significant change in the new Act is to require the registration of irradiating apparatus, prescribed electronic products, and premises where these latter two categories or radioactive substances are used. Licences will be required by users of the three categories, but there is provision for the granting of exemptions.

The last meeting of the Radiological Advisory Council, the 63rd, was held on 16th December, 1975. The only member who was a foundation member and present at the first meeting on 21st October, 1957 was Professor W. Simmonds. Professor D. J. Allen-Williams joined at the fifth meeting in April, 1959. Following the conclusion of business, the 63rd meeting, was attended by the foundation Chairman, Dr. W. S. Davidson, and by Dr. D. D. Letham, Chairman from 1965 until 1973.

The Radiation Safety Act provides for the establishment of a new body, the Radiological Council. This will be appointed early in 1976.

FILM BADGE RADIATION MONITORING SERVICE

The film badge radiation monitoring service provides a means of detecting exposure to ionising radiation for persons using X-rays and radioactive substances. The number of persons monitored rose by 7 per cent during 1975 to 2 291. The number of individual films processed during the year fell by 17·5 per cent to 20 205. This fall is the result of the extension of the period of wearing films in the dental profession from one month to three months and in most other groups from two to four weeks.

Table 3 shows the number of persons using film badges in each employer group.

TABLE 3

NUMBER OF PERSONS USING FILM BADGE MONITORING IN 1975 IN EMPLOYER GROUPS

Medical, Hospitals	428
Medical, General Practitioners	66
Medical, Radiologists and other	139
Chiropractors	35
Dentists	953
Non-Medical	670
Total	2 291

Details of personal radiation exposure as recorded by film badges are kept by the State X-Ray Laboratory. These records are kept on microfilm, and are readily accessible should dose information be required. The microfilm form of record facilitates storage for an indefinite period.

FIELD WORK—X-RAYS AND RADIOACTIVE SUBSTANCES

Laboratory personnel make regular visits to the premises of users of X-rays and radioactive substances. New users are advised on radiation protection requirements and existing establishments are visited to ensure that previous recommendations are being followed and that a satisfactory standard of radiation protection is being maintained. These visits contribute to the maintenance of radiation exposure of personnel at a low level and minimise the possibility of a serious radiation accident. In addition to inspecting the facilities and safety procedures, the Laboratory's Radiation Officers assist those concerned to make more effective use of radiation by advising on areas within their competence, such as medical and veterinary radiography.

The frequency of visits is determined by the extent of the radiation hazard presented. Industrial radiography operations are visited a number of times each year, whereas small hospitals and medical and dental practices may be visited at intervals of one to two years.

Nine country trips were undertaken during the year, three of which were by air. Over four hundred individual visits were made to licenced or registered establishments.

EDUCATION

This is an aspect of the Division's work which continues to be of paramount importance. Poor standards of operation of radiation producing equipment and poor observance of radiation protection procedures, are often the result of a lack of training in the use of the equipment and a lack of knowledge of the properties and effects of radiation. The training of some professional groups lags behind the sophistication of the techniques they are using, and it has been found that effort expended in individual lectures and short courses is of great benefit. The following courses were given in 1975:—

Radiation Safety in the Use of Radiation Gauges in Industry (Four courses)
Basic Radiography for Country Hospitals (Two courses)
Handling Radioactive Isotopes
X-Ray Safety in the Field (for Police Department)

Laboratory personnel lecture on radiation safety topics as part of established courses and give individual lectures to professional groups for in-service courses etc:

Course	Institutions
Health Technology	Bentley Technical School
Environmental Health	W.A.I.T.
Home Economics	Secondary Teachers College
Dental Nurses	Perth Dental Hospital
Radiography for Staff Nurses	Perth Dental Hospital
Domestic Science	Mt. Lawley Technical College

Lecture	Organisations
Radiography Seminar	Australian Veterinary Association
Radiation	Senior Science Teachers
Radiation	Senior High School Laboratory Assistants
Radiation Protection	Medical Dept. Cadet Radiographers
Radiation Protection	Graduate Radiographers
Radioisotope Seminar	University of W.A.

In addition, lectures and talks are given on request to schools, Rotary Clubs and other organisations.

DIAGNOSTIC RADIOGRAPHY—MEDICAL AND DENTAL

It is well known that after the natural background, diagnostic radiography for medical purposes is the greatest source of ionising radiation exposure to the population. The Council and the Physics Division have always been concerned to minimise this source of exposure, and to this end medical X-ray equipment used in W.A. must comply with the recommendations of the International Committee on Radiological Protection. The Division's officers carefully inspect every installation of new X-ray equipment for compliance with ICRP recommendations, with particular emphasis on those recommendations which have a direct bearing on the radiation dose delivered to the patient. Even though these recommendations have been published for many years, new equipment which does not comply in various respects is still being delivered. It is encouraging that after prolonged correspondence with some manufacturers, and in some cases after refusing to accept non-complying equipment until modifications have been made, a gradual improvement in the equipment delivered is evident.

There is a high degree of compliance with the ICRP recommendations by equipment used for dental radiography in Western Australia. It can justly be claimed that W.A. dentists achieve a high standard of radiation protection and the radiation doses delivered to their patients are correspondingly low.

USE OF X-RAY EQUIPMENT FOR SECURITY PURPOSES

Throughout the world, there has been increasing interest in the use of X-rays for examination of mail and baggage, bomb disposal etc. The Laboratory has co-operated with the Department of Customs and Excise in advising on radiation protection in the design of a fluoroscope for the examination of mail, and a successful prototype has been built by the Department. The Laboratory has advised other authorities on the design of similar equipment and its safe use.

NON-IONISING RADIATION

Although the Division has been responsible for some time for monitoring sources of non-ionising radiation this will not be backed by legislation until the Radiation Safety Act comes into force in 1976. Microwave ovens have been surveyed on request, and regular visits are made to establishments where ovens in use are of a type which are subject to excessive leakage.

Increased effort is being put by suppliers into the marketing of microwave ovens, especially for domestic use. New ovens sold in Australia must comply with standards adopted by the State electricity authorities, and it has generally been found that ovens currently being offered exhibit low leakage of microwave radiation. It is intended to continue surveillance of microwave ovens to ensure that leakage does not increase during service. During the lifetime of an oven, it may have to undergo maintenance several times. It is important that the safety features are not impaired during the maintenance and this imposes special responsibilities on maintenance personnel. It is intended to provide short courses on microwave radiation safety for these personnel.

The Division is gradually equipping for the surveillance of a range of radio-frequency radiations as well as visible, infra-red and ultra-violet light. In addition, equipment is to be obtained to ensure that monitoring instruments can be kept in proper calibration.

VETERINARY RADIOGRAPHY—RADIOTHERAPY

In the 1974 annual report, attention was drawn to the great increase in veterinary radiography and the interest in radiotherapy. There has been concern about the standards of radiography and radiation safety in some practices, and the matter has been discussed with representatives of the Australian Veterinary Association. The Association is co-operating in facilitating lectures and workshops being conducted in the areas of concern. An outline of a syllabus for training in the use of Strontium-90 beta ray sources for radiotherapy has been submitted to the Association.

RADIATION MONITORING AND COUNTING EQUIPMENT, RADIATION STANDARDS ETC.

The Division is equipped with a range of monitoring instruments for the field measurement of alpha, beta, gamma, x, and microwave radiation and visible light. For ionising radiation, the instruments cover the range from low energy X-ray analysis equipment, colour television receivers etc, to the high energy gamma rays from Cobalt-60 and radium.

A 512 channel analyser with low background counting assembly permits the analysis of small samples of radioactive material. Detectors include a 7·5 cm x 7·5 cm Sodium Iodide crystal for low level counting and a pure germanium detector for high resolution counting.

The Laboratory maintains a sub-standard x-ray dosemeter calibrated against the Australian primary standard at the Australian Radiation Laboratory in Melbourne. This is used for calibration of monitoring instruments and superficial therapy X-ray apparatus used by dermatologists and radiotherapists.

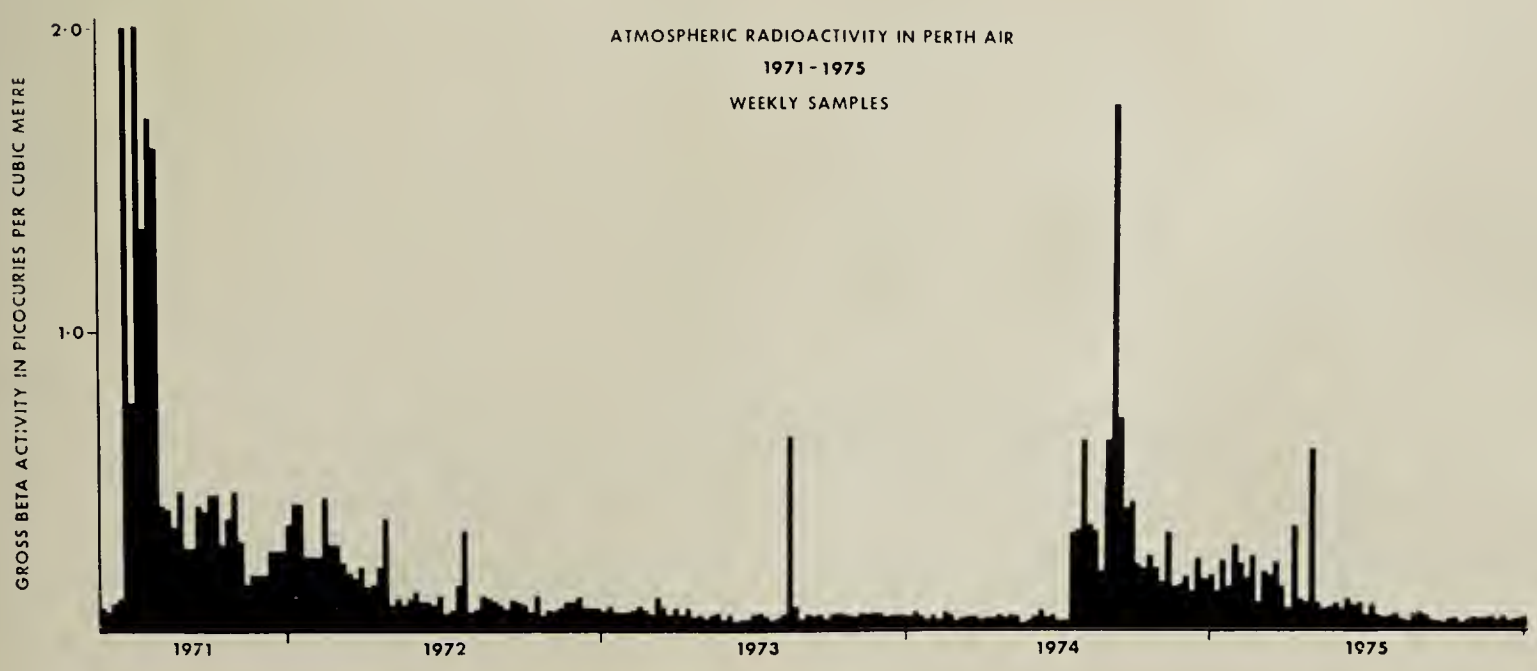
A range of standard radioactive sources are used for calibration of monitoring equipment.

TECHNICAL ADVICE

It is an important function of the Laboratory to give technical advice on radiation protection and radiation health matters to members of the public, applicants for licences, and to licencees. A considerable effort is put into advice on the design of radioisotope laboratories and on radiation protection in X-ray facilities.

ENVIRONMENTAL RADIOACTIVITY

For some years, the Division has conducted a continuous monitoring programme for radioactivity in rainwater and the atmosphere. Up to 1974, this was of special interest due to atmospheric nuclear tests carried out in the southern hemisphere. The figure shows the level of gross beta activity in weekly air samples from early 1971 to December 1975. It is interesting to note the gradual return to a low background level from the peaks of recent years.



MEMBERSHIP OF COMMITTEES

The Physicist in Charge is Secretary of the Radiological Advisory Council and a member of the Dental and Chiropractic Advisory Committees. Senior Physicist L. M. Davies is Secretary of the latter two committees and a member of the Chiropractic Advisory Committee's examining body.

The Physicist in Charge is a member of the N.H. and M.R.C.'s Radiation Health (Standing) Committee. L. M. Davies is a member of this committee's Working Groups on the design of Radiosotope Laboratories and on a Code of Practice for Veterinary Radiotherapy.

At the request of the Radiation Health (Standing) Committee, the Physicist in Charge prepared a Code of Practice on the Safe Use of Radiation Gauges in Industry and a Statement on the design of cabinet x-ray units for examination of mail, packages, etc.

Mr. L. M. Davies is W.A. representative on the Committee of the A. & N. Z. Society of Nuclear Medicine and is also a member of the committee of the newly formed Australian Radiation Protection Society.

Dr. B. M. Hartley is a member of the committee of the W.A. Branch of the Australian Institute of Physics.

STAFF

The permanent staff of the Physics Division numbers four physicists, two radiation officers, a technician and three office staff, with one temporary radiation officer. No staff changes occurred during the year. The Physicist in Charge was absent for three months early in the year on loan to W.H.O. for assistance to the Malaysian Ministry of Health. Once again it is a pleasure to acknowledge the enthusiasm and conscientious manner in which the staff perform their duties.

Appendix XIII

Technical Information Service and Library

J.F. Woolcott, M.B., Ch.B., F.Aust.P.H.A.
Medical Officer in Charge

The increasing volume of work handled by the main library and the S.H.L. library is clearly evident in the figures in the accompanying tables.

Interstate and overseas loans increased markedly from 196 to 297 (Table 1). Intrastate loans increased slightly from 876 to 904 (Table 2). Interstate external borrowing by this Library jumped from 372 to 462 (Table 3). Intrastate external borrowing fell for the main Library from 751 in 1974 to 612 in 1975 (Table 4) but for the branch library at the State Health Laboratories jumped from 267 to a massive 1 385 (Table 6). Purchase of new publications (with attendant work of classifying, cataloguing, distribution, entering on accession lists, etc.) increased by 38 per cent (from 1 244 to 1 717 see Table 5). The main P.H.D. Library, State Health Laboratory Library and State X-Ray Laboratories accounted for most of these extra publications.

Towards the end of the year it became apparent that big changes were going to occur in the organisation and structure of the Technical Information Service and Library in 1976. My retirement is scheduled for about the middle of the year so this will be my last annual report. The splitting of the head of this service into two, a Librarian at a much up-graded level and a separate Technical Information Officer are proposed. New sub-libraries and several staff changes and additions are foreshadowed. The Library has started to move into the micro field. A Micro Reader-Printout is being selected and both microfilm and microfiche subscriptions to journals are on the way.

As I look back on more than 25 years service in the Library I am very aware of all the help and encouragement I have received in that time from successive Commissioners of Public Health, from senior and junior officers in the entire Public Health and Medical Departments, but above all from the thirty six people who have given and are giving loyal and industrious service under me. To them all my sincere thanks. However, it is a humbling thought that my first junior is now a grandmother.

TABLE 1

INTERSTATE AND OVERSEAS LOANS

State or Country	1971	1972	1973	1974	1975
New South Wales	24	30	36	43	60
Victoria	11	30	20	22	50
Queensland	6	17	5	32	78
South Australia	4	12	12	33	30
Tasmania	12	11	11	22	28
Northern Territory	2	3	3	1	11
A.C.T.....	2	5	15	28	30
New Zealand	....	1	2	9	6
Papua New Guinea	....	4	10	4	4
Singapore	....	....	....	2	....
Totals	61	113	114	196	297

TABLE 2

INTRASTATE EXTERNAL LOANS 1975

Royal Perth Hospital Library	132
Medical Library	92
Department of Agriculture	51
M.H.S.	51

TABLE 2—cont.

W.A.I.T.	50
Murdoch University	46
University of W.A.	44
W.A.I.T. (Therapy Library)	43
Hollywood	39
Fremantle Hospital Library	35
K.E.M.H.	35
Princess Margaret Hospital	31
Churchlands Teachers College	30
G.C.L.	29
C.S.I.R.O.	21
Secondary Teachers College	20
Library Board	17
Spastic Welfare Association	17
Geological Surveys	16
P.W.D.	13
Mt. Lawley Teachers College	10
Parliamentary Library	10
Main Roads	9
Fisheries and Fauna	9
W.A. Govt. Railways	9
Dental Library	8
Alcoa	7
Forests Department	5
P.M.H. School of Nursing	4
W. J. Rooney Library	4
R.P.H. (Rehabilitation)	3
Claremont Teachers College	2
Department of Community Welfare	2
Department of Development and Decentralisation	2
R.P.H. Nurses Library	2
W.A. Museum	2
Department of Environmental Protection	1
State Electricity Commission	1
State Treasury Library	1
W.A.I.T. (School of Mines)	1
	904

Figures for earlier years are: 981 in 1971
996 in 1972
806 in 1973
and 876 in 1974

TABLE 3

INTERSTATE EXTERNAL BORROWINGS

Source	1971	1972	1973	1974	1975
New South Wales	9	34	35	40	52
Victoria	15	37	27	36	51
South Australia	29	78	82	145	160
Queensland	3	9	7	13	10
Tasmania	....	....	....	....	....
A.C.T.	13	47	71	138	189
Totals	69	205	222	372	462

TABLE 4

INTRASTATE EXTERNAL BORROWINGS

University	225
Medical Library	140
Library Board	117
R.P.H.	29
Department of Agriculture	27
G.C.L.	17
W.A.I.T.	16
C.S.I.R.O.	9
M.H.S.	8
Fremantle Hospital	5
K.E.M.H.	3
School Dental Service	3
Public Works	1
Fisheries and Fauna	1
Geological Surveys	1
P.M.H.	1
H.E.C.	1
Nurses Library	1
P.M.G.	1
Mt. Lawley Teachers College	1
Churchlands Teachers College	1
W.A. Secondary Teachers College	1
Murdoch University	1
W. J. Rooney Library	1
Australian Radiation Laboratory Library	1
	612

This compares with 265 in 1971
662 in 1972
497 in 1973
and 751 in 1974

TABLE 5

NEW PUBLICATIONS 1975

P.H.D.	627
Community Health Services	139
S.H.L.S.	120
S.X.R.L.	115
C.H.S.	84
Derby	55
Dental Health Services	46
Geraldton	41
Port Hedland	41
Mt. Henry Hospital	32
Bunbury	29
Narrogin	22
Health Administration	21
Meekatharra	21
Albany	20
Warren District Hospital	20
Wyndham	20
Dampier	19
Northam	18
Osborne Park	18
Busselton	15
Kalgoorlie	15
Swan District Hospital	14
Broome	12
Kununurra	12
Carnarvon	11
Collie	11
Katanning	11
Rockingham	10
Esperance	9
Marble Bar	9
Merredin	9
Claremont	8
Extended Care	6
Chest Clinic	5
Automatic Data Processing	4
Bentley	4
Cunderdin	4
V.D. Clinic	4
Murray District Hospital	3
Armadale/Kelmscott Hospital	2
Community Health Programme	2
Fitzroy Crossing	2

TABLE 5—cont.

Harvey	2
Menzies Nursing Post	2
Roebourne	2
Warburton Range	2
York	2
Alcohol and Drug Authority	1
Eucla	1
Exmouth	1
Gnowangerup	1
Goomalling	1
Kellerberrin	1
Kununoppin	1
Morawa	1
Mount Hospital	1
Norseman	1
Occupational Health	1
Paraburdoo	1
Pingelly	1
Quairading	1
Rottnest Island	1
Warburton Mission	1
Woodside Maternity Hospital	1
	1 717

Previous figures were: 1971, 1 104: 1972, 889: 1973, 1 061 and 1974, 1 244

JOURNALS

Additional New Journals Secured	34
Average Monthly Circulated	1 572

PHOTOCOPIES

Monthly Average of Photocopying of Library Material	999

JOURNALS CIRCULATED TO PRINCIPAL INSTITUTIONS 1975

Community Health Services	180
Dental Health Services	129
S.C.G.H.	46
Chest Clinic	34
Fremantle Prison Hospital	32
S.X.R.L.	30
H.E.C.	29
G.C.L.	23
Nurses Board of W.A.	17
M.H.S.	13
Department of Agriculture	3
Fremantle Hospital	3
	539

TABLE 6

STATE HEALTH LABORATORY LIBRARY

	1974*	1975
Internal requests	695	1 389
Borrowed Items	267	1 385
Direct and External Loans	6	9

* "Year" was from March to December only

Appendix XIV

Health Surveying Branch

J.F. Slattery, M.R.S.H., F.A.I.H.S.
Chief Health Surveyor

INTRODUCTION

The essential responsibility of the Health Surveying Branch is to measure and control environmental health hazards relating to Human Health: this involves the individual officer of the Branch in a wide range of activities varying from routine supervision of Community Health Standards, to the conducting of specific investigations and surveys in particular aspects of Environmental Health throughout the State, and introducing the necessary preventions, control, and surveillance programmes.

The following report is an outline of these activities for the year 1975.

1. ENVIRONMENTAL HEALTH—TRAINING

At the end of the year under review the first students in this State, trained at Tertiary level in Environmental Health graduated from the Western Australian Institute of Technology, thus culminating the efforts of a number of people; Departmental Officers, representatives of the Australian Institute of Health Surveyors (W.A. Division) and others, who have long recognised the need for a level of training and expertise commensurate with the demands of modern Health Technology.

The award from the Western Australian Institute of Technology is attained following three years full time attendance at the Institute, which together with the Diploma in Environmental Health which is attained by five years part time attendance at a Course conducted by the Technical Education Division of the Education Department, now become the recognisable qualifications for appointment as Health Surveyor in this State, and replace the Diplomas of the Royal Society of Health which have existed from 1911.

Current activities relating to training and Education Standards, include the evolving of training programmes which will allow practising Health Surveyors to convert existing qualifications to the Diploma or Degree level—and the development of a "Bridging Course" which will allow practising Health Surveyors to undertake post graduate studies at the Institute of Technology.

Branch Officers remain active in all areas.

2. TRAINEE HEALTH SURVEYORS

The Trainee Health Surveyor (Cadet) scheme was introduced eight years previously and continues to be a practical and worth while activity, of value to the Branch and the Department.

The scheme allows young men interested in a career in environmental Health to be given practical experience while completing their formal studies.

All four trainees currently engaged were successful in their end of year examinations, and two, having obtained the prescribed qualifications for appointment as Health Surveyor, were transferreed to permanent positions on the meat inspection staff.

There is continued interest in the positions of "Trainee" by young men from both within and outside the service, and the recruitment of two suitable persons to maintain the "Trainee" strength at the allowable number of four was readily accomplished.

The extension of the Training scheme to include field assistants from the Community Health Services, commenced the previous year was continued, and a further two officers were given practical training in those aspects of environmental Health which relate specifically to their own duties.

3. HEALTH LIAISON GROUPS

The purpose of the Health Liaison Groups, which were formed twelve years previously is to enhance communication between the Department and the country Local Health Authority Health Surveyor, and to allow an exchange of views and examination of common problems between people with similar areas of interest.

The four Groups, Northern Districts, South West, Great Southern and Eastern Districts, each met regularly during the year in most instances with a Departmental officer in attendance.

At each meeting the Groups endeavour to maintain a central theme, and to aid this purpose various persons, knowledgeable in a specific and topical area of environmental Health, are invited to attend a meeting and to address the Group; an example being a series of addresses relating to the Local Authority involvement in noise abatement, given by Officers of the Occupational Health Division by arrangement with Dr. F. Heyworth.

4. REGIONAL HEALTH GROUPS

Where the district needs of a particular Local Authority do not require the full time services of a Health Surveyor, or where economic factors temporarily preclude such appointment, a Regional Health Group is formed, when, with the approval of the Commissioner of Public Health and Medical Services, two or more Local Authorities share the services of a Health Officer and share the associated costs.

All such arrangements are made with regard to prevailing circumstances, and as circumstances change with resultant impact upon the administrative and financial arrangements, constant review of all regions is a continuing activity.

During the year, investigations relating to the changed circumstances in three Regions were commenced, and possible alternatives to the existing groupings are currently being examined and discussed with the affected Local Authorities. Plans to create a new group in the South West were also completed.

5. HEALTH SUPERVISION NORTH WEST AREAS

Predictably, changes in circumstances, has dictated numerous changes to the arrangements for this service since its inception fifteen years previously, and further changes appear inevitable.

The initial arrangements resulted in the forming of the Kimberley Health Region comprising the Districts of Derby, Broome, Kununurra, Halls Creek and Wyndham, with a Departmental Officer resident in Derby: and the Pilbara Health Region comprising the Districts of Hedland, Roebourne, Onslow, Tom Price, Paraburdoo and Pannawonica, with a Departmental Officer resident at Port Hedland; with each of the affected Local Authorities being required to contribute to the costs of the service.

Health supervision of the inland north west areas extending from Marble Bar to Shay Gap was maintained by regular supervisory visits by a Departmental Officer from Head Office.

The first change occurred in 1970 when the Pilbara Health Region was disbanded following the appointment of a Health Surveyor on a full time basis to the Port Hedland Shire Council, and the remaining Districts were re-grouped as the Roebourne Health Region, with the Departmental Health Surveyor then being resident in the newly established Town of Karratha.

Further changes occurred in 1972 following the formation of the new Local Authority Districts of East Pilbara and West Pilbara, which resulted in the abolishing of some existing Local Authority Districts and changes to others: Onslow, Tom Price, Paraburdoo and Pannawonica were included in the West Pilbara Local Authority District, and the mining town of Goldsworthy previously within the Port Hedland Shire District was included in the East Pilbara.

To meet these circumstances, the Roebourne Health Region was abolished. The Roebourne Shire Council was required to appoint its own Health Surveyor on a full time basis, and the Departmental supervision of the North West inland areas was extended to include the East and West Pilbara Districts.

Subsequently the West Pilbara Shire Council appointed a full time Health Surveyor, and from 1973 Departmental Health supervision of North West areas has been confined to the inland areas, the East Pilbara and the Kimberley Health Region where Local Authority appointments of a Health Surveyor have not been made.

Current planning provides for the full time appointment of a Health Surveyor to the East Pilbara Shire Council, and the re-arranging of the Kimberley Health Region to form two Regions with a Departmental Officer resident in each.

This region has doubled in population and development since the inception of the scheme, and it has become increasingly difficult for the one officer stationed in the area, to provide adequate Health Supervision.

Plans for this re-arrangement are well advanced, and should be implemented during the forthcoming year.

6. MEAT INSPECTION

Meat Inspection Services at the four major metropolitan abattoirs is a continuing activity, and was maintained throughout the year.

The Officers engaged on meat inspection duties are also responsible for the supervision of works sanitation, hygiene of personnel, and methods of storage and transport of meat and meat products: the Senior Officers are also responsible for the practical tuition of students enrolled in studies in environmental Health.

Liaison was maintained with the Chief Veterinary Officer and other Officers of the Department of Agriculture, in all matters relating to animal disease. Assistance was given with trace back procedures, and collection of specimens for submission to the appropriate laboratory.

In Country areas, where meat inspection in the first instance is the responsibility of the Local Authority, the survey commenced the previous year to determine the adequacy and competency of meat inspection services, and to obtain uniformity in meat procedures throughout the State was continued, and is continuing.

Improvement in these areas had previously been retarded by the economic loss being incurred by some Local Authorities where the costs of providing the service exceeded the inspection fees collected.

The amended scales of inspection fees, has now removed the economic barrier and effort is being directed towards ensuring that every place where meat is prepared for human consumption, is provided with an adequate and proper meat inspection service. While deficiencies still exist the situation is steadily improving.

During the year additional officers engaged specifically for meat inspection duties, were appointed by three country Local Authorities and others were able to re-arrange duties to allow the responsible officer to give proper attention to his meat inspection responsibilities.

Figures relating to the annual slaughtering and inspection of food animals throughout the State are shown as Appendix A.

7. MEAT INDUSTRY

As with previous years surveillance of all facets of the meat industry was continued including works, transport and personnel.

Although proposals for two new works had been examined and approved the previous year, and several proposals for new works were examined during the current year, for economic and other reasons, none of these were proceeded with, and the number of works operating remained static at 86, of which 14 are registered for export. The only new works constructed was built in replacement for an existing establishment which had been declared unsuitable, and closed.

Although some deficiencies still exist, the concentrated effort to obtain improved standards, conducted conjointly with the efforts to obtain improved meat inspection procedures, has resulted in steadily improving standards of hygiene and sanitation; and during the year apart from the replacement works referred to above, only three

other establishments were declared unsuitable and closed by order of the Commissioner of Public Health and Medical Services: all were permitted to re-open following the completion of the necessary work to bring them to the desired standard.

A special investigation relating to the methods of slaughter, transport and inspection of farm killed vealers, commenced the previous year, was completed and revealed serious deficiencies. Following a number of meetings with the representation of the producers and other affected organisations, a plan which allowed for improved methods of slaughter and proper inspection was evolved and agreed to, and a proposal for the construction of a new slaughtering premises is currently being considered.

Other continuing activities relating to the Meat Industry include:—

(a) Salmonella monitoring of effluents from major meat works and treatment plants: 165 effluent samples were submitted for micro-biological examination and 75 faecal samples from meat workers. Where laboratory examination reveals a food poisoning potential, trace back procedures are instigated and the source eliminated. Meat workers showing positive results are excluded from the works until certified clear.

(b) The examination of meat transport vehicles operating out from meat works and markets, to ensure compliance with prescribed standards: this activity is resulting in marked improvement, and is being assisted by the co-operation of the Department of motor vehicles which require all new vehicles proposed for the transport of meat to be examined, and if necessary, work conducted before permission to operate is given.

(c) Attendance by the responsible officer at meetings of the Standards Association of Australia Sub-Committee dealing with standards of safety in the meat industry.

8. FISHING INDUSTRY

Similarly to the Meat Industry this is a continuous activity involving constant surveillance of processing works, transport, storage and personnel.

The examination of the standards of hygiene and sanitation throughout the group of islands comprising the Abrolhos, which is being conducted in co-operation with the Department of Fisheries and Wildlife was continued, and generally improving standards is the result.

9. FOOD AND LIQUOR

Food

The control of environmental hazards relating to food involves premises, equipment and personnel, manufacturing, processing, storage, transportation, distribution and preparation for consumption, and is an area of increasing complexity and importance, requiring close liaison between Departmental Officers, officers of Local Authorities, and all facets of the food industry.

Activities during the year included investigation of proposals for marketing of food stuffs, investigation of various foods for compliance with the prescribed standards, examination of premises and investigation of specific complaints relating to food, and outbreaks of food poisoning.

The need for constant surveillance to protect the public from food borne disease and contaminated food, is again illustrated by a particular event which occurred during the year.

During the period June/September, numerous complaints were received from the public relating to imported desiccated coconut from the Philippines.

The complaints referred to odour and in some instances, nausea following consumption. Investigation, supported by laboratory examination revealed the presence of chemical contaminants to an extent as to render the food unfit for human consumption and the shipments were seized and destroyed.

Discussions were held with the representatives of the importing companies, and initially from the information provided it appeared that the coconut was being contaminated during transport, and remedial measures advised.

However, sampling of subsequent shipments continued to reveal contaminants to unacceptable levels, resulting in further seizures and condemnation. In all 733, 100-pound bags, and 883 dozen 200-gram packs were seized and destroyed, representing considerable economic loss to the industry.

Further discussions were held with representatives of the industry, when with the assistance of the Food and Nutrition Officer (Mr. J. R. Edinger) additional information relating to production and packaging, provided by the Association of Philippines Desiccators, was examined and evaluated. From these discussions it appeared clear that the contaminants were being introduced at the source of supply and not while in transport as it originally appeared.

Subsequently the Association of Philippine Desiccators sought the assistance of the Department to overcome the problem which they had been unable to isolate, and with the approval of the Commissioner of Public Health and Medical Services, and the State Government, the Officer in Charge of the Food and Liquor Section (Mr. G. E. Kaiser) and the Department's Food and Nutrition Officer (Mr. J. E. Edinger) accepted the invitation of the Association to visit the Philippines, and assist in whatever way possible.

The visit resulted in a safe and acceptable food product.

During the year under review 265 consumer complaints involving a wide variety of foodstuffs were received from individual members of the Community; which once again illustrates the increasing public awareness to the health hazards relating to spoiled and contaminated foods.

The complaints were made up as follows:—

Food	No. of Samples
Baby Food	2
Bacon	1
Beer	2
Bread	27
Cake Mix	3
Cereals	2
Chocolate	3
Confectionery	7
Cool Drinks	12
Eggs	2
Fish	10
Flour	1
Food Poisoning	15
Food Premises	31
Fruit	15
Fruit Juice	7
Ginger	1
Honey	1
Ice Cream	2
Meat and Meat Products	44
Milk (and bottles)	36
Mushrooms	2
Muesli	7
Nuts	3
Pizza	6
Poultry	5
Rice	4
Sugar	3
Vegetables	9
Vinegar	1
Total	264

Sampling

Special and routine sampling programmes were maintained during the year. In all 2 175 samples of various foods were taken of which 969 were for microbiological examination, and 1 206 for chemical analysis. In addition 23 samples of a miscellaneous nature were also taken.

Where found to be unfit for human consumption the consignment represented by the sample was seized and destroyed.

Details are as follows:

BACTERIOLOGICAL SAMPLES

Food	No. of Samples
Bean salad	20
Biscuits	2
Canned Tomatoes	4
Cereal products	60
Chinese Type Rolls	20
Coconut	13
Coleslaw	12
Custard Mixes	70
Eggs	13
Fish	20
Meat and Meat Products	486
Milk and Milk Products	74
Mushrooms	2
Pastry	6
Potato Salad	15
Poultry	106
Rice	1
Rice Salad	24
Shellfish	23
Total	971

CHEMICAL SAMPLES

Food	No. of Samples
Bread	28
Coconut Packs	91
Cooking Oil	1
Fish	572
Flavourings	7
Flour	7
Fruit	7
Fruit Juice	29
Fruit Salad	9
Meat and Meat Products	51
Mushrooms	3
Peanuts	1
Pickled Onions	2
Potatoes	2
Poultry	22
Seasoning	8
Shellfish	302
Sugar	6
Sweets	18
Tomatoes (canned)	13
Vegetables	25
Vinegar	2
Total	1 206

MISCELLANEOUS SAMPLES (BACT.)

Type of Samples	No. of Samples
Water	2

MISCELLANEOUS SAMPLES (CHEM.)

Type of Samples	No. of Samples
Aboriginal liniment	1
Glazed mug	1
Plastic bags	15
Soda Water	2
Water	2
Total	23

FOOD CONDEMNATION

620	cartons confectionery
457	cartons prepared meals
3	carton dates
5	tins mushrooms
52	tins Spanish Olives
13	chests tea
20	cartons Cheese
190	cartons Prawns
10	cartons Jelly Crsytals
3	cartons Spaghetti
1	carton Cornflour
6	cartons Tomato Sauce Portions
159	cartons Biscuits
1 365	packets Biscuits
3	packets Sliced Meat
2 884	cartons Tomatoes Canned
1	can Ham
1	packet Oysters
6	cartons Frozen Fish
164	cartons Muesli
37	tubs cream
62	tubs Yoghurt

Imported Foods

The examination and taking of samples of all imported food products, was maintained during the year. At each of the main importing centres, Fremantle Wharf, and the Kewdale marshalling yards, one officer is in full time attendance assisted by others as necessary, and at the Guildford Airport supervision is provided as the need arises.

In addition to physical examination and sampling of imported foods, activities included routine organoleptic tests, checking of labelling and packaging, and supervision of storage and transport.

Although the extent of and variety of imported foods continues to increase, frozen fish off-loaded at Fremantle Wharf continues to predominate; and during 1975, 2 738 304 Kgs were examined, and inspection fees amounting to $4 566.85 collected.

All food products determined as being not fit for human consumption were condemned and destroyed under supervision. Details of samples taken, and imported foods condemned and destroyed are as under:

66792—(12)

CHEMICAL SAMPLES

Food	No. of Samples
Chocolate	2
Coconut	298
Fish	246
Meat and Meat Products	2
Mushrooms	2
Peanuts	1
Poultry	4
Sesame Seed	1
Shellfish	106
Total	662

BACTERIOLOGICAL SAMPLES

Food	No. of Samples
Coconut	14
Fish	5
Shellfish	58
Total	77

CONDEMNED AND DESTROYED

Type	Weight in kilos
Anchovies	33·6
Artichokes	103·6
Asparagus	22·06
Beans, Lima	469·00
Bamboo Shoots	11·24
Bolognaise Sauce	2·77
Coconut	623·42
Cheese	20·65
Champignons	11·95
Dried Figs	27·27
Dates	861·24
Dried Oysters	11·36
Beef Paste	126·81
Frogs Legs	1·78
Bean Curd	12·25
Crackers, Prawn	2·72
Cocoa	8·0
Grapefruit	155·55
Apricots	10·5
Nuts	166·15
Olive Oil (Litres)	15·0
Pickles	157·54
Olives	192·0
Split Peas	1 500·0
Fish—Frozen	444·22
Fish—Canned	243·85
Tea	28·0
Vegetables—Canned	7·65
Tomato Sauce	13·5
Tomatoes—Canned	1 878·87

CONDEMNED AND DESTROYED—cont.

Chutney	12·25	
Mandarines—Canned	4·05	
Eggs (Dozen)	90	Ships Stores
Flour	300·00	Ships Stores
Beefsteak	40·0	Ships Stores
Alimentary Paste	2·5	
Cockles	408·6	
Vindaloo Paste	2·54	
Prunes	10·0	
	7 927·49	Kilos plus 90 dozen eggs and 15 litres Olive Oil.

Liquor

A total of 913 visits were made to Licensed premises during the year; 529 in the metropolitan area, and 384 in Country districts, made up as follows:

	Current Licenses			Inspection		
	Town	Country	Total	Town	Country	Total
Hotel	147	294	441	183	241	424
Tavern	52	31	83	41	9	50
Limited Hotel	16	8	24	13	6	19
Winehouse	18	1	19	17	1	18
Cabaret	23	4	27	24	2	26
Restaurant	75	28	103	63	21	84
Theatre	3	....	3	....	1	1
Club	129	162	291	101	84	185
Club—Unlicensed	21	60	81	....	....	....
Packets	5	....	5	....	....	....
Canteen	1	30	31	2	1	3
Aust. Wine	13	6	19	15	1	16
Store	164	128	292	12	13	25
Wholesale Spirit	45	16	61	33	4	37
Brewers	3	1	4	1	....	1
Catering	....	....	....	20	....	20
Airport	....	....	1	....	....	1
Vineyards	....	....	....	3	....	3
	715	769	1 485	528	384	913

All premises visited involved a sanitation survey, and examination of methods of food handling and preparation, cleanliness of bar areas and cool rooms, and the presence of blue dye in waste beer containers.

On site testing of spirit strengths was conducted with the Sykes Hydrometer, and where shown to be not in compliance with the prescribed standard, legal samples were taken for chemical analysis.

During the year 6 602 various classes of spirits both local and imported were tested for strength, and 70 samples taken for chemical analysis.

Where circumstances warranted, legal proceedings were initiated.

Follow up action resulted in the Proprietors of 122 licensed premises of various classes, being requested to use blue dye in waste beer containers; legal proceedings were subsequently initiated against four, for repeated non-compliance; and against another four, for sale of sub-standard spirits.

Fifty-one premises were requested to make improvements to cool rooms, and 7 were requested to improve conditions relating to food handling and storage.

Routine testing and sampling of a number of consignments of imported rum, whisky and brandy revealed spirit strengths not in accordance with W.A. standards and arrangements were made with the distributors for withdrawal from sale and re-exporting.

An examination of two local bottling organisations, which were repeatedly showing spirit strengths marginally below prescribed limits, revealed the cause to be faulty equipment and testing techniques of the affected companies. Following advice from Departmental officers, improvements were made and a satisfactory product resulted.

Special Projects

Special projects relating to food, conducted under the auspices of the National Health and Medical Research Council conducted in co-operation with the Departments' Food and Nutrition Officer (Mr. J. R. Edinger) included:

(1) Monitoring of levels of mercury in food: a total of 159 sharks to a total weight of 1 107·24 kilograms were condemned and destroyed for presence of mercury of the prescribed limit of 0·5 parts per million.

(2) The continuation of the "market basket" survey which involves the taking of predetermined samples of food at predetermined periods, for assessment of pesticide residuals and heavy metals.

(3) Continued monitoring of fruit juice products for determination of standards.

(4) A sampling programme of various types of plastic bags and containers intended for use as food containers, for presence and levels of Poly Chlorinated Biphenyls.

(5) Continued participation in a nation wide sampling programme aimed at determining and prescribing microbiological standards for food, particularly from fast food outlets.

Other Matters of Interest include:

(i) Routine examination of food handling situations on Government Properties including Cafeterias, hotels and eating houses.

(ii) Re-drafting and updating of the food hygiene regulations.

(iii) Liaison and discussion with the Architectural Division of Public Works Department and architects in private practice with a view to setting standards for food handling situations on Government properties.

(iv) Liaison and discussion with the State Licensing Court, the Australian Hoteliers Association and other allied organisations with a view to setting standards to be observed when a change of occupancy occurs with licensed premises. A working party comprised of representatives of the affected Departments and organisations is proposed to be established early in the forthcoming year.

(v) Lecturing of formal and *ad hoc* groups on all aspects of food handling and hygiene.

The Officers of this Branch are again indebted to the Professional advice and assistance given by the Department's Food and Nutrition Officer Mr. J. R. Edinger.

10. ROYAL AGRICULTURAL SHOW

As with previous years supervision of all aspects of Environmental Health and Public Safety, was the responsibility of Departmental Officers.

Aspects supervised included standards of hygiene of food handling and liquor premises, hygiene of personnel and public safety aspects of exhibits and side shows.

Activities related to the environmental health aspects of the Showgrounds commences some weeks prior to the period of public use, and is continued during the period the public are in attendance.

The co-operative arrangement made with the Royal Agricultural Society some years previously which provides for proprietors of proposed food outlets to first comply with the Health Standards now set out in the form of tender before a licence is issued,

is resulting in steadily improving standards of hygiene and sanitation which is reflected by the fact that for the second consecutive year there were no reports of illness attributable to food consumed at the Show Grounds.

Food stalls and premises licensed after examination for compliance with Health requirements numbered 144, an increase of four over the previous year despite the number of milk stands being reduced by five, which were considered to be not to required standards.

Plans for four major food outlets proposed for use in the forthcoming year are currently being examined.

The need for continued Health Surveillance in situations where vast numbers of people are gathered for extended periods is shown by two particular examples which occurred during the current Show.

(1) A giant beef-burger, containing the meat of a whole body of beef, and the equivalent of several hundred loaves of bread had been prepared as a promotional display with the intention of subsequently distributing to the public free of charge. However, because of exposure to the sun and other factors, the hamburger was considered to be not suitable for human consumption, and while the display for promotional purposes was allowed, distribution to the public was not permitted.

(2) During a period of peak attendance, the toilet facilities adjacent to Hardy Avenue became inoperative due to blockages caused by tree roots entering a drain resulting in a serious sewage back up and overflow. Corrective action involved the temporary closing of an adjacent food stall, screens were erected around the affected area and liquid waste tankers utilised to contain the overflow and so avoid the necessity for complete closing of the adjacent street trading.

Repairs were affected within 6 hours and after sanitising of the affected area, the facilities were made available to the public.

Other activities included an examination of the fire fighting plans and facilities, which resulted in improvements being recommended to the R.A.S., and an examination of toilet and ablutionery facilities for disabled persons, which is continuing.

11. COMMUNITY WASTES

Early in 1975 the Metropolitan Refuse Disposal Planning Committee requested the Department to proceed with the formulation of draft legislation for the formation of a Statutory Waste Disposal Authority.

A special committee formed by the Department examined the situation and over a period evolved a number of drafts. After consultation with the Crown Law Department it was finally decided that as the power already existed under the provisions of the Health Act to control waste disposal measures that the proposed legislation should be included within the framework of the Act.

The final draft was to be submitted to the Central Committee and then distributed to Local Authorities for comment.

Investigations continued during the year into matters relating to possible future waste disposal sites. These investigations mainly included outer fringe metropolitan locations which could be set aside now for the long term future use. A continuing effort in this respect is necessary in view of the constraints now being imposed on the use of land for waste disposal and the compounding exhaustion of existing sites within the metropolitan area.

Other investigations relating to community waste disposal include examination of a number of proposals to dry render wet garbage to a condition suitable for stock feed, and two proposals for a complete re-cycling programme for domestic refuse.

The re-cycling of car bodies also received impetus in 1975 by the involvement of a commercial enterprise which provided mobile and static compression plant.

A further two proposals to provide plant to re-cycle motor vehicle tyres were examined.

12. PUBLIC BUILDINGS

The specialised area of activity relating to part VI of the Health Act (Public Buildings) is a continuing activity which continues to widen in scope and application.

During the year under review, three hundred and seventy-nine proposals were examined and approved, subject to compliance with the necessary conditions affecting public safety.

Projects included, hospitals, schools, swimming pools, public halls, nursing homes, kindergartens, churches, hotels and night clubs, representing a total value estimated at thirty-six million dollars.

All plans and specifications for new proposals, and alterations and extensions to existing public buildings were examined, discussions held with the designing architects, the consulting engineers of the Public Works Department, and where necessary officers of the W.A. Fire Board; and constant "on site" inspections were conducted during the structural stages to ensure compliance with the required standards of Health and Public Safety.

Of necessity, activities relating to Public Buildings are directed mainly towards the supervision of new projects, however, routine supervisory examination of existing Public Buildings was maintained throughout the year either directly by Departmental officers or in co-operation with Local Authority officers, and Public Works Department District Supervisors.

During the year, one Public Building found to be unsafe for public use was closed by Order of the Commissioner of Public Health and Medical Services, and a second, also closed by Order was allowed to re-open following completion of the necessary structural work.

Irregularities in Health Standards, Public Safety and electrical conditions frequently occur in existing public buildings as a consequence of change of occupancy, usage, or proprietor, which can only be detected and remedied by continual routine supervision. This applied particularly to the type of establishment which caters to the public with meals, dancing and entertainment, which is growing in popularity, and has involved conversions of licensed premises, restaurants and night clubs. The irregularities appear to occur mostly from a lack of knowledge or requirements rather than deliberate endeavour to avoid compliance, and in most instances managements readily co-operated when requirements were explained. An example being where a survey of electrical installations in cabaret style buildings in the metropolitan area revealed deficiencies at 20 premises, in some instances to an extent as to be a potential fire hazard.

Action to remedy was taken immediately by all Proprietors following the service of notices.

An area of concern related to this type of establishment is the extent of overcrowding which occurs on occasions, which being sporadic and transient in nature is difficult to supervise and control, and methods of obtaining improvements are currently being studied.

The Statewide survey of swimming pools commenced the previous year was continued, and is continuing. To the end of the year 60 centres embracing 77 pools had been visited. The purpose of the survey is to examine the standards of sanitation and hygiene being observed and to require improvement where found necessary. The survey includes an examination of methods of storage of chemicals, water purity, methods of testing of water quality and where necessary instruction of pool attendants is conducted.

Late in the year this activity was extended to include an examination of the efficiency of silver-ion water sterilization units for use in private swimming pools. A private swimming pool was made available and a testing programme under controlled conditions evolved in co-operation with officers of the State Health Laboratory, and the Government Chemical Laboratories. The testing is expected to continue into the forthcoming year when the results will be collated and analysed.

Other activities relating to public buildings included:—

(a) The training and examination of swimming pool attendants and proprietors on behalf of the National Safety Council.

(b) Lecturing of various formal and *ad hoc* groups on matters relatin to public buildings.

(c) Carrying out investigations and assisting in the drafting of design criteria for fire prevention in Hospitals.

(d) The preparation of amendments to the Public Swimming Pool regulations to provide alternative methods of water testing to give effect to the N.H. and M.R.C. recommendation to introduce alternatives to the use of orthotolodine.

13. CARAVAN PARKS AND CAMPING GROUNDS

The supervision of existing parks, and the examination of new proposals was continued as with previous years, and still requires the full time services of one officer. Although the desired objective is to have every caravan park in the State visited at least once in each year by the Departmental Officer, this is not always practicable and the application of the "priority for attention" system evolved the previous year was continued during the current year.

During the year under review two new parks were established in the metropolitan area, each of 60 sites; improvements and extensions were made to a further three, and a proposal to enlarge one park by 48 sites is currently being examined.

In the South West area, four new parks are proposed for construction during the forthcoming year, and improvements planned for another four.

In the Pilbara and Kimberleys, four new parks are planned and improvements and extensions planned for five existing parks.

Plans and specifications of all new projects and alterations to existing establishments are examined, discussions held with the developers and on-site meetings held to ensure compliance with required standards.

The increasing popularity of caravanning and camping as a form of recreation particularly during the peak holiday periods has naturally resulted in an increase in the problems associated with over-crowding, malfunctioning of facilities, illegal use of Crown Lands and occupancies of semi-permanent nature, which because of the resultant health hazards and the difficulties of control are areas of continuing concern.

These matters are now to be examined by a special working party established late in the year following a meeting convened by the Commissioner of Public Health and Medical Services with senior representation from the affected Departments of Health, Local Government Tourism and Lands.

The inaugural meeting of the working party is to be held in the new year.

14. LAND SUITABILITY

Requests from the Town Planning Board for an opinion on the suitability of land for building purposes totalled 301; by comparison during the previous year 191 requests were examined. The current requests were made up as follows:—

New Metropolitan Sub-Divisional proposals	216
Country Sub-Divisions	63
Area Surveys	22
Total	301

Each proposal was individually examined, the ground water pattern determined, and a determination made as to the suitability or otherwise of the land for the proposed purpose. Where applicable the particular land treatment required was specified.

Other activities relating to land usage included specific investigations conducted at the request of Local Health Authorities, other Government Departments, and private individuals and organisations. In all a total of 85 special investigations of this nature were conducted throughout the year.

During the year this activity was extended to include investigation of proposed uses of land adjacent to contour channels, or forming part of water catchment areas,

at the request of the water purity committee. There is increasing interest in recreational use of water catchment areas and the investigations are conducted in order to establish the extent and manner the land can be used without impact upon the Public Water Supplies. It is expected that this activity will continue to increase.

15. SEPTIC TANKS AND SEWERAGE SCHEME

During 1975, a total of 7 726 applications for the installation of bacteriolytic treatment systems (septic tanks) were examined and approved.

In 1974, 7 969 applications were dealt with, and in 1973, 9 979.

The gradual decline in applications is reflected mostly from the metropolitan area, where extension of deep sewerage facilities is gradually reducing the necessity for "on-site" disposal systems, and also to the increasing trend for new sub-divisional proposals to be fully serviced before release for development.

Proposals for the installation of deep sewerage systems under the provisions of the Health Act for three Country Local Authority Districts were examined and approved and extensions to four existing systems were examined and approved.

As with previous years a variety of various chemicals and additives designed for use in septic systems and chemical closets were examined and tested, and new designs of chemical closets submitted for Departmental approval were examined and tested.

16. PEST CONTROL

Early in the year, the construction of the new Pest Control Centre at Graylands was completed, and on the 30th April the section transferred its operations to the new accommodation.

While essentially designed for the specific purpose as a pest control centre, the building also includes a lecture auditorium which has already been extensively used, and space and facilities to establish a Public Health museum.

The essential function of the section is pest control treatment of Government and semi-Government buildings, but additionally the officers concerned are responsible for advising Local Health Authorities, the private sector and others on specific control measures for pest eradication. A mailing information service aimed at providing specific advice for a particular problem has now been introduced and is extensively used.

Due to economic and other reasons, the proposed extension of Pest Control Activities to Government buildings in the north west areas was not proceeded with during the current year, but it is anticipated to commence early in the new year. The necessary vehicle is now equipped and operable.

Other activities included the following:—

(a) Training of mature age fly control officers for employment by Local Health Authorities during the periods of the fly eradication programme.

(b) Training of Local Authority Employees in pest control procedures.

(c) Formulating of Pest Control Chemicals.

(d) Investigation of major termite infestation of country hospitals and evolving treatment programmes.

(e) Routine inspections relating to fly control to measure efficiency of recommended control measures included 192 of Government Hospitals and Institutions, 60 of railway truck washing out yards, 264 of metropolitan skin drying sheds, 88 of metropolitan abattoirs and 48 of sewerage Treatment Works.

Details of specific pest control treatment are as under:—

Rodent	435
Cockroach	231
Termite	57
Red Back Spider	33
Mosquito	26

Silverfish	23
Ant	22
Flea	22
Honey Bee	9
Pigeon	7
Bed Bug	7
Weevil	7
Pigeon Mite	3
Drug Store Beetle	2
Carpet Beetle	2
Sand Fly	1
Midge	1
Crab Louse	1
Body Louse	1
Clothes Moth	1
Hornet	1
Fly	15

Summary for year ending 31st December, 1975

Total number of fly control inspections	652
Total number of insecticidal treatments	472
Total number of rat bait placements and bi-weekly inspections	435

17. METROPOLITAN FLY CAMPAIGN

The concept of a continuous fly eradication programme with emphasis during the optimum breeding periods during autumn and spring was initiated in 1961 following a meeting of Local Authority Representatives and Departmental Officers concerned by the Commissioner of Public Health and Medical Services, and as with mosquito control is a continuing activity.

The campaign involves the co-ordination of Local Authority effort in fly control, the training of mature age fly control officers for employment by Local Authorities during the Autumn/Spring campaign period and the evaluation of results obtained.

The relevant details relating to the current years campaign are shown as Appendix —B.

18. MOSQUITO CONTROL

Mosquito Control is a continuing activity of the Branch and includes surveys, advice to Local Authorities and members of the public on specific treatment and eradication methods.

The broad area surveys of the Canning River and various portions of the South West, commenced the previous year was continued during the current year.

These surveys are aimed at determining the incidence and prevalence of the various aedes specie of mosquito, and to evolve methods of control conjointly with the affected Local Authorities and other Government Departments.

Additionally, officers of the Branch have been assisting in evolving midge control programmes. Although not recognised as a Public Health hazard, the prevalence of midge breeding in certain localities in the metropolitan area and the effect upon the surrounding community is causing Local Authorities concern, and a concerted effort is being made to reduce the problem.

19. DETAILS OF SOME OTHER ROUTINE AND SPECIAL INVESTIGATIONS CONDUCTED DURING THE YEAR

1. Regular supervisory visits to Country Local Authorities: 224 were visited.
2. Investigation of complaints and statutory appeals to the Commissioner of Public Health and Medical Services. 54 appeals and 276 complaints were investigated.

3. Investigations and introducing of control measures relating to an outbreak of Shigella in a country district, cases of psittacosis, and outbreaks of infectious disease.
4. Civil Emergency activities relating to the Environmental Health aspects of the Darwin Emergency evacuation, the Port Hedland cyclone, and a proposed strike by M.W.S.S. and D. Board Employees.
5. Attendance at meetings and conferences on behalf of the Commissioner of Public Health and Medical Services both locally and inter-state. Lecturing of Environmental Health students, and various other formal and *ad hoc* groups and organisations.
6. Special investigations relating to contaminated water supplies, public and private, heavy metal content of toys, paints and inks, and presence of Poly-chlorinated Biphenyls (P.C.B.'s) in wrapping paper and plastic products.
7. The commencement of a survey on behalf of the Water purity Committee to determine chemical and micro-biological standards of public water supplies throughout the State.
8. Continuing activities commenced the previous year included:—
   (a) An investigation of methods of construction and materials used in transportable houses with a view to setting standards.
   (b) A special survey to determine structural and public health standards of all schools throughout the State.
   (c) Investigation of public health implications relating to the proposed recreational and other uses of water catchment areas on behalf of the Water Purity Committee, and preparation of Draft Legislation.
   (d) Supervision of hygiene standards at Rottnest Island on behalf of the State Gardens Board, and comprehensive water sampling programme of Thompsons Bay and the adjacent water, to determine presence and extent of pollution.
9. Routine Sampling activities included:—

(a) Bacteriological Examination

Rivers, Oceans, National Parks	2 045
Public Swimming Pools	54
Rivers	342
Miscellaneous Water (Bores etc.)	38
Salmonella Survey (Abattoir Workers)	110
Salmonella Survey Rottnest Island	415
Food Poisoning	9
Abattoir Effluents	209
Total	3 222

(b) Chemical Analysis

Birds	2
Toys	17
Crockery	13
Paper and Plastic	31
Water	20
Miscellaneous	6
Total	89

APPRECIATION

My appreciation is again extended to a dedicated and loyal staff who were responsible for these activities.

APPENDIX A

MEAT INSPECTION FOR THE YEAR ENDED 31st DECEMBER, 1975

Abattoir and Type of Stock Slaughtered	Stock Slaught-	Carcases Condemned										Part Carcases Condemned						Organs Condemned						
		Tuberculosis	Actinomycosis	Emaciation	Piroplasmosis	Pleuro-penumonia	Caseous Lymph-Adenitis	Para-typhoid	Traumatic and Septic	Other Abnormalities	Total	Actinomycosis	Caseous Lymph-Adenitis	Tuberculosis	Arthritis	Other Abnormalities	Total	Actinomycosis	Echinococcus Granulosis	C. Ovis	Hydatids	Tuberculosis	Other Abnormalities	Total
MIDLAND—																								
Cattle and Calves	73 649	65	....	....	....	....	....	....	85	34	184	2 008	....	....	1	32	2 041	1 622	160	....	....	....	13 839	15 621
Sheep and Lambs	233 247	....	....	....	....	....	8 893	....	1 630	9 144	19 667	....	11 297	....	8 244	....	19 541	....	368	....	....	....	239 789	240 157
Pigs	123 959	6	....	....	....	....	....	....	89	805	900	....	....	44	1 069	854	1 967	....	....	....	....	....	36 597	36 597
ROBBS JETTY—																								
Cattle and Calves	72 035	3	1	....	....	....	....	....	20	22	46	448	....	....	41	160	649	1 281	54	....	....	....	3 932	5 267
Sheep and Lambs	923 089	....	....	....	....	....	1 408	....	216	8 998	10 622	....	941	....	1 141	643	2 725	19	100	....	....	....	90 335	90 454
Pigs	16 895	....	....	....	....	....	....	....	22	58	80	....	....	....	126	70	196	....	1	....	....	....	7 384	7 385
WATSONS—																								
Pigs	119 925	29	....	....	1	....	....	20	108	660	818	....	....	....	12 486	3 211	15 697	....	....	....	....	....	13 699	13 699
ANCHORAGE—																								
Cattle and Calves ..	4 451	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sheep and Lambs	60 078	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
COUNTRY DISTRICTS*—																								
Cattle and Calves	239 296	4	6	4	....	....	....	4	39	263	320	194	....	18	37	1 390	1 639	359	....	....	54	2	5 546	5 961
Sheep and Lambs	1 076 806	....	7	1 408	....	....	6 159	....	229	4 607	12 410	1	3 943	....	1 675	494	6 113	....	....	2 639	500	....	2 6748	29 887
Pigs	69 302	....	3	....	....	....	....	1	27	75	106	....	....	10	251	525	786	....	....	....	....	5	7 185	7 190
Goats	4 090	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
TOTAL STATE—																								
Cattle and Calves	38 431	72	7	4	....	....	....	4	144	319	550	2 650	....	18	79	1 582	4 329	3 262	214	....	54	2	23 317	26 849
Sheep and Lambs	2 293 220	....	7	1 408	....	....	16 460	....	2 075	22 749	42 699	1	16 181	....	11 060	1 137	28 379	19	468	2 639	500	....	356872	360 498
Pigs	330 081	35	3	....	1	....	....	21	246	1 598	1 904	....	....	54	13 932	4 660	18 646	....	1	....	....	5	64 865	64 871
Goats	4 090	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

NOTE: Country abattoirs included—
*Albany, *Boulder, *Boyup Brook, Bunbury, Busselton, *Carnarvon, Dardanup/Capel, *Denmark, Esperance, Greenough, Harvey, *Katanning, Kojonup, Mankjimup, *Merredin, *Moora, Narrogin, Northam, Plantagenet, *Port Hedland, *Tammin, *Toodyay, Wagin, Waroona, *Wongan-Ballidu, Woodanilling.
* Only stock slaughtered, no condemnation figures received,
Anchorage figures are approximate as inspections were made on part carcases for local market.

APPENDIX B

FLY CAMPAIGN (BOTH PHASES) 1975/76

SUMMARY OF RESULTS

Local Authority	No. of Persons Employed	Total Time (In Employment—Weeks)	No. of Premises Visited	No. of Premises Inspected	No. of Premises where Breeding found	No. of Breeding Places found	Rubbish Bins	Buried Food Wastes	Poultry Keeping	Incinerators	Mulch	Compost Heaps	Blood and Bone	Animal Manure	Fowl Manure	Lawn Clippings	Other
City of Perth	14	288	25 085	23 671	1 229	1 362	733	84	4	38	17	107	2	53	72	252	....
City of Stirling	3	30	3 745	2 666	234	255	140	6	8	5	1	27	....	5	5	58	....
City of South Perth	2	12	1 881	1 788	67	67	6	4	15	....	....	14	3	....	5	20	....
City of Fremantle	2	21	5 118	2 820	72	75	21	13	2	4	....	3	....	3	3	26	....
City of Melville	7	77	12 273	11 384	590	629	116	64	3	12	25	110	1	23	13	262	....
City of Subiaco	2	19	4 300	4 140	251	251	130	9	....	2	4	30	....	3	4	66	3
City of Nedlands	2	23	2 771	2 714	44	44	9	3	2	....	....	9	....	2	3	16	....
Town of Canning	1	11	2 286	1 242	9	9	1	....	....	....	2	....	....	1	1	3	1
Town of Cockburn	1	6	1 112	634	10	10	5	1	1	1	....	....	....	2	....	....	....
Town of Mosmans	1	5	759	749	21	21	4	2	2	....	....	4	....	2	1	6	....
Shire of Kalamunda	1	13	3 849	3 663	233	233	200	3	....	....	1	5	....	5	12	7	....
Shire of Peppermint Grove	1	2	280	272	6	7	1	1	1	....	....	....	....	....	....	4	....
Shire of Rockingham	2	28	3 761	3 443	130	135	69	6	....	2	5	12	....	3	3	35	....
Shire of Wanneroo	1	16	3 130	2 233	42	42	18	....	8	....	4	3	....	....	1	7	1
Total	40	551	70 350	61 419	2 938	3 140	1 453	196	46	64	59	324	6	102	123	762	5

METROPOLITAN FLY CONTROL PLANNING COMMITTEE

SUMMARY OF 1975/76 CAMPAIGN

Report of Fly Control Officers Employed and Premises Inspected During both Phases of 1975/76 Campaign

Local Authorities Participating	14
Students Employed	4
Mature Aged Persons Employed	36
Premises Visited	70 350
Premises Inspected	61 419
Premises Breeding Flies	2 938

Breeding Sites	%
Rubbish Bins	46·3
Buried Food Wastes	6·2
Poultry Keeping	1·5
Incinerators	2·0
Mulch	1·9
Compost Heaps	10·3
Blood and Bone	0·2
Animal Manure	3·3
Poultry Manure	3·9
Lawn Clippings	24·3
Other	0·1

Comparative Figures of Breeding

	%		%
1961/62	22·3	1968/69	9·0
1962/63	23·5	1969/70	8·1
1963/64	10·0	1970/71	7·9
1964/65	10·0	1971/72	6·7
1965/66	9·4	1972/73	5·0
1966/67	7·9	1973/74	6·0
1967/68	6·7	1974/75	4·5
		1975/76	4·8

METROPOLITAN FLY CONTROL PLANNING COMMITTEE

FLY CAMPAIGN 1975/76

COMPARISON WITH 1974/75—BOTH PHASES

	No. of Premises Inspected		No. of Houses Breeding Flies		Percentage of Houses Breeding Flies	
	1974/75	1975/76	1974/75	1975/76	1974/75	1975/76
City of Perth	24 341	23 671	1 623	1 229	6·7	5·2
City of Stirling	4 330	2 666	296	234	6·8	8·8
City of South Perth	2 552	1 788	38	67	1·5	3·7
City of Fremantle	1 943	2 820	37	72	1·9	2·6
City of Melville	13 354	11 384	328	590	2·6	5·2
City of Subiaco	4 164	4 140	95	251	2·3	6·1
City of Nedlands	5 960	2 714	59	44	1·0	1·6
Town of Canning	3 498	1 242	163	9	4·7	0·7
Town of Cockburn	901	634	68	10	7·5	1·6
Town of Mosmans	534	749	11	21	2·0	2·8
Town of Bassendean	2 967	....	147	....	5·0	....
Shire of Belmont	4 996	....	144	....	2·9	....
Shire of Kalamunda	2 935	3 663	314	233	10·7	6·4
Shire of Peppermint Grove	353	272	8	6	2·3	2·2
Shire of Rockingham	4 176	3 443	201	130	4·8	3·8
Shire of Wanneroo	1 503	2 233	18	42	2·0	1·9

STATISTICAL SUMMARY OF ANNUAL FLY CAMPAIGN 1975/76

Year	Number of Local Authorities		No. of Vacancies	No. of Persons Trained	No. of Courses	No. Available	No. Employed	Previously Trained Persons Applied	Previously Trained Persons Employed	Total No. of Weeks	No. of Premises Inspected	No. of Premises Visited	No. of Premises Breeding Flies	Percentage of Houses Inspected Breeding Flies	No. of Breeding Places Found
	Metro-politan	Country													
1969/70	14	1	41	37	4	37	36	18	18	327	40 643	52 688	3 303	8·1	3 481
1970/71	16	1	35	33	3	33	33	5	5	343	51 121	61 080	4 050	7·9	4 539
1971/72	16	....	35	31	4	25	25	13	13	440	66 487	75 895	4 477	6·7	4 737
1972/73	16	....	42	23	2	23	23	19	19	564	75 133	86 051	3 728	5·0	4 066
1973/74	15	1	41	24	4	24	24	24	24	564	69 787	76 750	4 154	6·0	4 369
1974/75	16	....	51	20	3	20	20	31	31	625	78 504	89 051	3 545	4·5	3 818
1975/76	14	....	40	20	4	20	19	21	21	551	61 419	70 350	2 938	4·8	3 140

Appendix XV

Food and Nutrition Section

J. R. Edinger, B.Sc. A.R.A.C.I.
Food and Nutrition Officer

1. GENERAL

The past year has proved to be an extremely busy and challenging one due to the complexity of the problems which eventuated in the food and packaging fields.

As predicted in my last report, contaminants in packaging materials proved to be the subject of much publicity, necessitating investigation and appropriate action.

These contaminants are discussed further on in this report.

The importation of some 36 tonnes of desiccated coconut contaminated by chemicals over a period of three months occasioned many consumer complaints and posed the very serious problems of establishing the identity of the chemical compounds.

By the implementation of an intensive sampling and analytical investigation programme two chemical contaminants were isolated and identified. Further details are given later in this report.

A report on the "Mercury Content of Western Australian Fish", compiled in conjunction with the Department of Wildlife and Fisheries was presented early in 1975. Research on the many varieties of sharks for estimation of mercury content and the statistical evaluation of the results could be assessed at the present time as the best in existence. Four meetings of the National Health and Medical Research Council's Food Standards Committee were attended during the year.

As a result of the various discussions which eventuated, new and amended food standards were produced.

Two meetings of the National Therapeutics Goods Committee were attended and the subject of uniform therapeutics goods legislation was discussed with the ultimate view of States adopting same.

Due to the known presence of contaminants in plastics for food contact the Standards Association of Australia established a Committee to originate and formulate standards for these plastic materials. Two meetings were attended during the year.

2. SAMPLING PROGRAMMES, INVESTIGATIONS AND ALLIED WORK

Food samples taken by officers of the Health Surveying Branch, inclusive of consumer complaints, special sampling programmes etc. totalled 3 200. A detailed account of the nature of these samples is furnished in the various tables published in the Chief Health Surveyor's Report on Food and Liquor. To avoid duplication therefore, only those items which have been of major importance encountered during the year are detailed hereunder.

2.1 **Fish.** Canned, Frozen, Crustaceans and Molluscs.

Inclusive of imported fish, 980 samples were taken and subjected to examinations of various kinds. Routinely, the mercury content was estimated in most samples and in some cases, the heavy metals cadmium, lead, arsenic and zinc. Many samples were assessed for quality "freshness" by carrying out total volatile bases analyses. Results in general proved to be satisfactory if the majority of shark flesh analyses for mercury content were excluded, as these results are biased because of the selective sampling programmes either for research data or at the fish markets etc, where the tendency is to sample large sharks which predominantly have a level of mercury exceeding 0·5 mg/kg (the prescribed limit). As an illustration, the wholesale marketing of shark was closely watched during the year and on sample results, 159 were seized and condemned.

A comprehensive report on fish conjointly compiled with the Department of Wildlife and Fisheries was tabled in Parliament in April. A large section of the report refers to research carried out on the many species of sharks for mercury content and the statistical evaluation of size/weight relationships to try and establish guides for professional fishermen for their shark catch.

It would appear that any large shark of its species would exceed the prescribed limit for mercury content in its flesh.

2.2 **Desiccated Coconut**

Two chemical contaminants in imported desiccated coconut were found to be responsible for the off-odour and taste. It was only after considerable intensive study, sampling and analytical work that the commonly used fumigant methyl bromide was isolated as one of the contaminants. The other contaminant was identified as sulphur dioxide in relatively high amounts. A combination of both gave an unacceptable product. Some four hundred samples were examined in respect to identification and condemnation procedures. The producers in the Philippines considered the situation to be of sufficient gravity to invite two officers from the Department to visit their factories in an advisory capacity. My sincere thanks are tendered to Mr. J. F. Slattery, Chief Health Surveyor, for his aid in arranging details for the visit and to Mr. G. Kaiser, Officer in Charge of Food Inspection who accompanied me and who was of great assistance during our stay in the Philippines.

On recommendations made, better process control has been established in the use of sulphur dioxide and a standard analytical method for its estimation has eliminated the problem of the presence of excess sulphur dioxide. The plastic bags containing desiccated coconut are no longer transported loose but are packed in clean, sealed sea-containers which has eradicated further possible methyl bromide contamination.

2.3 **Fruit Juices**

Samples totalling 29 were taken during the year with the emphasis on orange juice and orange fruit juice drink. Manufacturers were warned where products were deficient in juice content to bring them up to the required standard. Re-sampling will be carried out at intervals to check on juice contents.

2.4 **Plastic Packaging Materials**

Imported polyethylene plastic bags were found to contain quantities of lead and were destroyed. Also, the printing and pigmentation on many of the types of bags examined had been done with high levels of lead and cadmium and where appropriate, action was taken to condemn them. Polychlorinated biphenyls (P.C.B.'s) were detected in some consignments and where necessary the bags were destroyed. Due to the toxicological information received from the U.S.A. on the inhalation of polyvinyl chloride monomer by workers engaged in the manufacture of polyvinyl resin, considerable interest was taken in the monomer content of P.V.C. packaging materials in contact with food.

Standards will be established for the limits of P.V.C. monomer in rigid packaging materials, flexible films and in food itself.

2.5 **Market Basket Surveys**—Metals and Pesticides.

Four quarterly purchases of foods as prescribed by a detailed sampling list were made in conjunction with officers of the Commonwealth Department of Health and the National Health and Medical Research Council to estimate the level of heavy metals and pesticides and to assess seasonal variations.

2.6 **Sperm Whale Products**

Based on previous research carried out on the mercury content of various organs of the Sperm Whale, batches of whale meal and solubles from which the liver, kidney and bile sac had been excluded, resulted in an approximate reduction of some 25 per cent. of the total mercury present in these two products. Other investigational work is still proceeding.

3. FOOD REGULATIONS

Five meetings of the W.A. Food and Drug Advisory Committee were held at which 15 amendments to the Food and Drug Regulations were approved.

4. APPRECIATION

In conclusion I wish to thank the Chief Health Surveyor Mr. J. F. Slattery for his co-operation in the many problems presented throughout the year and to those officers of the Food Inspection Section so ably led by Mr. G. E. Kaiser, Officer in Charge of Food and Liquor Inspection.

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Appendix XVI

Statistics Branch

Marlene M. Lugg, M.T. Sc.D., M.P.H., F.H.A., F.A.P.H.A., F.R.S.H.
Health Statistician

HOSPITAL MORBIDITY STATISTICS

GENERAL

As in previous years the Hospital Morbidity Statistics system has been used widely throughout Western Australia by not only the Health Services but also individual hospitals and other organisations in their planning efforts. The quality of the system continues to improve and I would like to take this opportunity to again thank all hospital and medical personnel in public and private hospitals who have made the system possible by their continued excellent co-operation. Again special thanks also to the Australian Bureau of Statistics for their help with the Hospital Morbidity system and other general statistical collections for this branch.

During 1975 the major use of the Hospital Morbidity system within the department was to update and revise the former State Health Council's Report on Metropolitan Hospital Needs. The report, though only several years old is now out of date because of dramatic changes in the birth and immigration rates in Western Australia. As a result the hospital building programme was able to be modified, with a reduction in projected capital costs of $54 000 000. The work for this revised report cost approximately $2 500 in staff and computer time; a good example of how a relatively small expenditure can pay off with great savings for a State when hospital morbidity data is routinely available.

TOTAL DISCHARGES

During 1975 total hospital discharges increased by 5·8 per cent from 1974 (243 703 to 257 800). Admissions during which operations were performed increased by 9 per cent over the previous year (115 108 to 125 446); and hospitalisation for accidental injury decreased by 0·1 per cent (33 227 to 33 197). This is the first year since the total State coverage of the Hospital Morbidity system began in 1971 that there has been a decrease in absolute numbers, per cent and rates for admissions due to accidental injury. The decrease is very slight; only one tenth of one per cent, which occurred almost entirely in 0–4 year old males. It is of course hoped that the trend will continue with a corresponding decrease in total accidental injury cases requiring treatment of any sort inside or outside of hospital. While accidental injury has slightly decreased, the severity of those cases admitted to hospital may well have increased, as the "in hospital death rate" has increased from 9 per 1 000 admissions in 1974 to 10·6 per 1 000 admissions in 1975.

HOSPITAL DISCHARGE RATES W.A. 1971–75

Year	Rate per 1 000 Population		
	Perth	Rural	Total State
1971	169	278	205
1972	180	300	218
1973	182	308	222
1974	185	301	223
1975	195	306	230

As in previous years, there has been almost no variation in hospitalisation patterns by disease, sex or age groups. Accidental injury continues to be the main reason for admission of males to hospital, followed by diseases of the respiratory system and the digestive system, in that order. For females, pregnancy and childbirth are still the main reason for hospital admission (in spite of a declining birth rate), followed by diseases of the genito-urinary system and diseases of the respiratory system. Of course the pattern varies greatly by age groups (Tables 5 and 6).

LENGTH OF STAY

The teaching hospitals continue to have the longest average stay at 9·1 days, private hospitals having the shortest (6·7 days) and other Government and Board hospitals are between at 7·2 days. The overall drop in mean length of stay for all hospitals has continued as in previous years, with the State mean now being 7·6 days. The overall slight decrease in length of stay is reflected in most conditions treated, except for perinatal morbidity and the supplementary classifications (I.C.D. Y 00– Y 89).

MEAN LENGTH OF STAY BY TYPE OF HOSPITAL
W.A. 1971–75

Year	Mean Length of Stay (days)			
	Teaching	Govt. & Board	Private	All Hospitals
1971	10·6	8·1	7·4	8·7
1972	10·1	7·9	7·0	8·3
1973	9·6	7·7	7·0	8·1
1974	9·5	7·6	6·7	8·0
1975	9·1	7·2	6·7	7·6

The mean stay for operations remained at 7·3 days, as in 1974.

Although the mean length of stay for admissions due to accidental injury decreased from 8·2 to 8·0 days, this group still accounts for 12·9 per cent of all discharges and 13 per cent of total hospital bed days. As in previous years, accidental injury remains the leading reason for hospital admissions in the male although it never ranks higher than fourth for females (see Table 19).

TYPE OF HOSPITAL

The overall distribution of patients by type of hospital remains almost constant between the private government and teaching hospitals, with a slight shift towards the teaching hospitals (see below). As Medibank-1 began during the year 1975, an attempt was made to separate the months prior to Medibank from the Medibank months to see if this shift occurred before Medibank or after. The data was then compared with the same portions of the previous year. A thorough search of the data has failed to reveal any reason for the shift, as most of it occurred in the eight months prior to Medibank being introduced into the hospitals. Further studies of the data will of course be made when Medibank has been in operation for an entire year; nevertheless preliminary data indicates no major shift of patients from one type of hospital to the other as a result of the introduction of Medibank in this State.

DISTRIBUTION OF DISCHARGES BY TYPE OF HOSPITAL W.A. 1971–75

Year	Type of Hospital		
	Teaching	Govt. & Board	Private
	%	%	%
1971	29·5	47·7	20·4
1972	29·2	47·4	23·4
1973	29·9	46·9	23·2
1974	30·7	46·1	23·2
1975	31·7	46·4	21·9

SURGICAL OPERATIONS

Forty-eight per cent of all hospital discharges had at least one surgical operation during their hospital stay. This ranges from a low of 32 per cent in Government and Board hospitals to a high of 75 per cent in Private hospitals. In the Teaching hospitals 55 per cent of discharges had surgical operations. As in previous years, surgery on the abdomen is the main operation group for males, followed by orthopaedic

operations and operations on the urinary and genital organs. For females, surgery on the genital tract remains the leading type of surgical operation followed by obstetric operations and operations on the abdomen.

HOSPITALISATION AND VITAL STATISTICS

An interesting side effect of the lower birthrate is shown in Table 7 which shows a corresponding reduction of the birthrate per 1 000 females aged 15–44 and lower discharge rate for pregnancy and related conditions of the antenatal and post natal period. Thus as the birthrate per 1 000 females has decreased from 113·2 to 84·4, the related hospital discharges have decreased from 142·6 to 117·5.

NEW TABLES, REVISED FORMATS

As will be seen from the Index to the Hospital Morbidity Tables published with this Report, several of the Tables are new in format this year, which is the fifth anniversary of State-wide coverage of the Hospital Morbidity system. It is anticipated that more such comparison tables will be published in the future, either as part of this or as a supplementary report. In particular, Tables 6, 7, 15 and 19 indicate the sex and age specific discharge and operation rates since 1971. This type of information will be of more use in monitoring patterns of disease than the raw data. As noted in previous Annual Reports, other data is available on request from the Statistics Branch of the Health Department and can be obtained for various age, sex, disease and hospital groups. Persons comparing 1975 hospital discharge data for type of hospital with previous years are advised that prior to 1975 Tables 10 and 17 were slightly inaccurate in that they included Repatriation General Hospital under Country Government and Board Hospitals. This has been rectified for 1975 data, and amended Tables from 1971–1975 will be produced sometime during the following year and possibly published with the 1976 Annual Report.

Western Australian Hospital Morbidity data was used outside the State in two notable events this year:

(1) Grouped data of Pre-Medibank Hospital Admissions was used by the Health Insurance Commission in comparing pre and post Medibank hospitalisation patterns.

(2) A Paper written by the Health Statistician entitled "A Comparison of Hospital Utilization Under Three Health Insurance Schemes; Australia, United States, Scotland and England and Wales" was presented at the 103rd Annual Meeting of the American Public Health Association in Chicago, U.S.A., in November of 1975. The Paper created great interest and over 100 reprints have since been requested from overseas. A revision of the Paper is being prepared for publication in an international journal and further work on comparison of hospital utilization is being carried out within the Statistics Branch.

SERVICE TO OTHER PUBLIC HEALTH DEPARTMENT BRANCHES

The Statistics Branch continues to offer advice and assistance in statistical and survey methods to other branches of the Health Services. During the current year Dental Health Services was assisted with a feasibility study on comprehensive school dental health records.

Work continues with the Occupational Health Branch in surveys of miners and various other groups for health examination and hearing surveys.

Infant and Child Health Services redesigned their record forms during the year and were assisted by the Statistical Branch, to enable possible future computerisation of the data without further forms change.

Increased use has been made of Statistics Branch data by the Medical Department. The Statistics Branch has worked closely with the Medical Department's consultants, Llewelyn-Davies & Co., Sydney, who have been preparing reports on the proposed Lakes and Wanneroo Hospitals. Much staff time has been involved in furnishing data to these groups for use in planning future construction programmes.

CO-OPERATION WITH OTHER GOVERNMENT DEPARTMENTS AND ORGANISATIONS

Close co-operation continues between the Statistics Branch of the Health Department and the Statistical Research Unit of the Mental Health Services. During this year the Statistics Research Unit, *Mental Health Services*, moved from its former location at 3 Havelock Street to new quarters on the same floor of the Health Department as the Statistics Branch. This was done primarily because the computing equipment already installed in the Statistics Branch could service both organisations; in addition the possibility of staff in one organisation relieving staff in another in times of peak workloads was considered an advantage, and has proved to be so.

Continued co-operation with the *University of Western Australia's Medical Statistics Unit* has resulted in a number of publications either individually or jointly between the two groups. This type of university—health services co-operation is somewhat unique in Australia and is already proving extremely fruitful in Health Services planning. I would hope that continued co-operation between the two units will result in unique and extremely important data being analysed for the Western Australian scene.

During this year the Statistics Branch and the *Registrar General* of Western Australia set up a checking system to ensure that all births are registered, as a by-product of the Health Department's Midwives Notification of Birth Form. While we are still in the first year of operation, evidence is rapidly accumulating that it has been proved to be a fruitful exercise for both departments, benefiting the Registrar General in making sure all births are registered, and the Statistics Branch in ascertaining much needed information for planning of services to mothers and children.

The Nurses Registration Board approached the Department during the year to start a co-operative effort for registration processing and statistical data. Previously the Nurses Board has had to employ typists to address the registration forms, approximately 10 000 per year. The new system is being designed so that the registration forms will be automatically addressed to the individual nurses by the Statistics Branch computing equipment. Upon re-registration, the form will be received by the Nurses Board, which will ascertain the nurses status and registration; and send the forms to the Statistics Branch for data extraction and processing. The Nurses Board is then furnished an alphabetic and numeric listing of all the nurses in the State. In addition, the statistical questionnaire on the form is processed by the Statistics Branch and this data is made available to the Nurses Registration Board, but is also used by the Statistics Branch for health manpower planning. This system is indeed a step forward in this State, and it is anticipated that the results will warrant its extension to other health professional registration boards at their request at a later date.

Cancer Register Computer work is almost finished, and it is hoped that the first five year report on the Western Australian Central Cancer Register will be produced during the year 1976. During this year both the Health Statistician and the Assistant Health Statistician attended a conference of Cancer Registry Personnel in Melbourne under the sponsorship of the Australian Cancer Society which paid for fares and accommodation. Western Australia and New South Wales are still the only two State-wide Epidemiological Cancer Registrars, and both are only approximately five years old. Research using the Cancer Register will increase dramatically after the computer facilities are finalised during 1976.

Considerable time has been spent during this year advising the *Human Genetics Society of Western Australia* on data processing problems which they would face in possible computerisation of their records. Several draft proposals have been made and submitted to the Society and will undoubtedly involve the Health Services Statistics Branch to some degree over the next years.

MEETINGS ATTENDED, REPORTS PRESENTED

Perth was the setting for the 3rd National Congress of the Australian Institute of Hospital Administrators during June, 1975. One of the principal speakers for the Congress Theme "What of Tomorrow?" was the Health Statistician whose paper was entitled "Out of the Mists of Ignorance".

The World Health Organisation's Regional Teacher Training Centre for Health Personnel in New South Wales sponsored a three-day workshop on the development of a training programme for Health Services Research Personnel. The Health Statistician was one of the experts who participated in the drafting of the proposed course for research workers in the health field, and proposed selection criteria for health research personnel.

The National Hospitals and Health Services Commission sponsored the first national seminar entitled "New Directions in Health Policies" for one week during April of 1975. Participation in the Seminar was by invitation only and the Health Statistician, one of the participants, also prepared a background Paper for this Seminar titled "Health Data and Statistics Gaps in Australian Health Services Research and Planning".

During August the Internation Women's Year Conference on Women's Health was held in Brisbane. With the theme "Women's Health in a Changing Society", it drew participants from throughout Australia and overseas. The Health Statistician presented her Paper on "Women's Use of Western Australian Health Services" as part of this national conference.

Mention has been made elsewhere of the Health Statistician's Paper presented at the American Public Health Association meeting in Chicago. During this trip overseas, she also was an observer at the final conference for the revision for the 9th Internation Classification of Diseases, held at the World Health Organisation in Geneva, Switzerland. She also spent several days working with Dr. Ray Elling, at the University of Connecticut; Director of the inter-university consortium working on Cross National Studies in Health Systems. As this was just prior to the introduction of Medibank the Health Statistician gave several seminar lectures at the University of Connecticut and the University of Pittsburgh on the Australian Health Insurance System prior to Medibank and possible implications of the introduction of Medibank.

The National Health and Medical Research Council re-organised some of its Committees during the year and the Health Statistician was appointed to and attended the first meeting of the newly reconstituted Health Statistics Committee of that Council.

The Premier of Western Australia set up a State Statistical Co-ordinating Committee during 1975, and called for possible membership from the various Departmental Ministers. The Health Statistician is one of the inaugural members of this Committee, which consists of representatives of the Public Service Board, the Australian Bureau of Statistics, the Premier's Department, the Department of Transport and of course the Health Services. The Committee has met on several occasions and has been working on re-defining statistical boundaries in W.A. for the 1976 census.

Although the Health Statistician has spent considerable time travelling and presenting Papers during the current year, all the Commonwealth organised meetings were paid for by funds from the Commonwealth Government, and the overseas trip by the Health Statistician herself, thus not incurring any travelling expense to the State Government.

OTHER ITEMS OF INTEREST

As in past years the Statistics Branch continues to offer practical training and experience for fifth year Medical Students as part of their Social and Preventive Medicine Course, and employs medical students during the summer holidays for special public health projects. During 1975 the Health Statistician has also lectured on survey method and health statistics to W.A.I.T. students Community Health Nursing Students, the W.A. Branch of the College of Nursing, and other interested groups. The report written by the Health Statistician in her capacity as a special consultant on health statistics to the National Hospitals and Health Services Commission has been submitted to the Commission, which has decided to use it as the basis for a national meeting in February of 1976 on the future of health statistics in Australia.

In closing I would again like to thank the staff of the Statistics Branch for their continued loyal support and untiring efforts in serving the Health Department, and the extra burden they all carried during my absence interstate and overseas.

Appendix XVII

HOSPITAL IN-PATIENT STATISTICS FOR 1975

Index to Tables

TABLE 1

DISCHARGES FROM W.A. HOSPITALS 1975

SUMMARY BY AGE GROUPS AND LENGTH OF STAY (DAYS)

Description	Age Groups					Total
	0–4	5–14	15–44	45–64	65 and Over*	
ALL DISCHARGES—						
Number	27 938	26 392	122 945	47 292	33 233	257 800
Percentage of Total	10·84	10·24	47·69	18·34	12·89	100·00
Length of Stay	149 628	107 331	731 669	449 702	532 017	1 970 347
Percentage of Total	7·59	5·45	37·13	22·82	27·00	100·00
Average Length of Stay	5·4	4·1	6·0	9·5	16·0	7·6
OPERATION CASES ONLY—						
Number	6 318	13 324	68 030	25 261	12 513	125 446
Percentage of Total	5·04	10·62	54·23	20·14	9·97	100·00
Length of Stay	25 666	52 409	397 850	220 317	183 134	879 376
Percentage of Total	2·92	5·96	45·24	25·05	20·83	100·00
Average Length of Stay	4·1	3·9	5·8	8·7	14·6	7·0
EXTERNAL CAUSE (INJURY)—						
Number	3 547	5 051	16 223	4 896	3 480	33 197
Percentage of Total	10·68	15·22	48·87	14·75	10·48	100·00
Length of Stay	16 562	23 159	108 114	54 858	64 447	267 140
Percentage of Total	6·20	8·67	40·47	20·54	24·12	100·00
Average Length of Stay	4·7	4·6	6·7	11·2	18·5	8·0

* Includes Ages not stated.

TABLE 2

AGE SPECIFIC HOSPITAL DISCHARGES

WESTERN AUSTRALIA 1968—1975*

Year	Age Groups						Total	
	Under 15		15–64		65+			
	Number of Discharges	Percentage of Total	Number of Discharges	Percentage of Total	Number of Discharges	Percentage of Total	Number of Discharges	Percentage of Total
1968	34 215	27·57	72 379	58·33	17 495	14·10	124 089	100
1969	39 926	27·65	83 262	57·66	21 212	14·69	144 400	100
1970	41 404	27·69	86 420	57·79	21 725	14·53	149 549	100
1971	49 399	23·37	135 516	64·12	26 434	12·51	211 394	100
1972	54 184	23·60	146 507	63·81	28 902	12·59	229 593	100
1973	55 087	23·18	152 036	63·98	30 511	12·84	237 634	100
1974	53 046	21·77	159 625	65·50	31 032	12·73	243 703	100
1975	54 330	21·07	170 237	66·04	33 233	12·89	257 800	100

* Private hospitals not included prior to 1971

TABLE 3

DISCHARGES FROM W.A. HOSPITALS—1971–1975

SUMMARY BY AGE GROUPS

Description	Age Groups										Total		
	0–4		5–14		15–44		45–64		65 and over				
	No.	Rate*	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	% change
All Discharges—													
1971	25 898	245	23 501	114	99 412	218	36 104	194	26 434	347	211 349	205	N/A
1972	28 426	261	25 758	124	107 007	228	39 500	209	28 902	371	229 593	218	+ 8·6
1973	29 831	273	25 256	120	110 075	231	41 961	217	30 511	378	237 634	222	+ 3·5
1974	28 128	259	24 918	117	115 514	234	44 111	224	31 032	373	243 703	223	+ 2·6
1975	27 938	257	26 392	124	122 945	242	47 292	235	33 233	387	257 800	230	+ 5·8
Operation Cases Only—													
1971	5 294	50	12 175	59	49 458	108	18 063	97	9 177	120	94 167	91	N/A
1972	5 828	53	13 019	62	56 274	120	19 860	105	10 536	135	105 517	100	+12·1
1973	5 863	54	12 609	60	57 524	121	21 013	109	11 083	137	108 092	101	+ 2·4
1974	6 202	57	12 783	60	61 968	126	22 752	116	11 403	137	115 108	105	+ 6·5
1975	6 318	58	13 324	63	68 030	134	25 261	126	12 513	146	125 446	112	+ 9·0
External Cause (Injury)—													
1971	3 154	30	4 231	20	14 960	33	4 352	23	2 838	37	28 535	28	N/A
1972	3 657	34	4 582	22	14 745	31	4 732	25	3 059	39	30 775	29	+ 7·9
1973	3 540	32	4 847	23	15 916	33	4 816	25	3 157	39	32 276	30	+ 4·9
1974	3 755	36	4 917	23	16 188	33	5 043	26	3 324	40	33 227	30	+ 2·9
1975	3 547	33	5 051	24	16 223	32	4 896	24	3 480	41	33 197	30	— 0·1

* Rate per 1 000 population—(1971 Census, 1972–75 Estimates from Australian Bureau of Statistics, subject to revision after 1976 Census).

TABLE 4

W.A. HOSPITALS—PATIENTS DISCHARGED DURING 1975

I.C.D. Categories	Disease Groups	Number of Cases		Number of Days in Hospital		Average Number Days in Hospital		Per Cent of Total Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Transferred	Died	Deaths Per 1 000 Separations
Sec. I													
000–009	Intestinal Infectious Diseases	2 686	2 672	18 267	17 014	6·8	6·4	0·9	0·9	5 222	121	15	2
010–019	Tuberculosis	194	78	7 895	2 414	40·7	30·9	0·4	0·1	236	31	5	18
020–027	Zoonotic Bacterial Diseases	6	....	67	....	11·2	....	0·0	....	6	....	....	....
030–039	Other Bacterial Diseases	224	166	2 861	1 595	12·8	9·6	0·1	0·1	335	23	32	82
040–046	Poliomyelitis and Other Enterovirus Diseases of Central Nervous System	62	48	451	348	7·3	7·2	0·0	0·0	107	3	....	....
050–057	Viral Diseases Accompanied by Exanthem	305	305	2 098	2 134	6·9	7·0	0·1	0·1	598	10	2	3
060–068	Anthorpod-borne Viral Diseases	12	7	168	30	14·0	4·3	0·0	0·0	15	3	1	52
070–079	Other Viral Diseases	1 428	1 496	5 976	6 317	4·2	4·2	0·3	0·3	2 886	36	2	....
080–089	Rickettsioses and Other Anthropodborne Diseases	33	8	205	40	6·2	5·0	0·0	0·0	40	1	....	....
090–099	Syphilis and Other Venereal Diseases	178	323	654	1 075	3·7	3·3	0·0	0·1	500	1	....	....
100–104	Other Spirochaetal Diseases	3	1	15	1	5·0	1·0	0·0	0·0	4	....	....	....
110–117	Mycoses	79	79	743	765	9·4	9·7	0·0	0·0	152	4	2	12
120–129	Helminthiases	22	27	150	266	6·8	9·8	0·0	0·0	48	1	....	....
130–136	Other Infective and Parasitic Diseases	143	120	1 086	1 063	7·6	8·7	0·1	0·1	256	6	1	3
Sec. II													
140–149	Malignant Neoplasm of Buccal Cavity and Pharynx	109	46	2 105	638	19·3	13·9	0·1	0·0	132	7	16	103
150–159	Malignant Neoplasm of Digestive Organs and Peritoneum	522	424	9 891	9 476	19·0	22·4	0·5	0·5	702	39	205	216
160–163	Malignant Neoplasm of Respiratory System	748	138	14 988	2 498	20·0	18·1	0·8	0·1	617	36	233	262
170–174	Malignant Neoplasm of Bone Connective Tissue Skin and Breast	888	853	7 790	11 335	8·8	13·3	0·4	0·6	1 655	32	54	31
180–189	Malignant Neoplasm of Genito-Urinary Organs	694	571	9 217	7 350	13·3	14·4	0·5	0·4	1 120	46	99	78
190–199	Malignant Neoplasm of Other and Unspecified Sites	583	554	9 514	10 044	16·3	18·1	0·5	0·5	794	45	298	262
200–209	Neoplasms of Lymphatic and Haematopoietic Tissue	409	386	4 067	4 228	9·9	11·0	0·2	0·2	687	19	89	111
210–228	Benign Neoplasms	628	1 770	3 577	11 016	5·7	6·2	0·2	0·6	2 366	20	12	5
230–239	Neoplasms of Unspecified Nature	150	153	1 538	1 255	10·2	8·2	0·1	0·1	275	16	12	39
Sec. III													
240–246	Diseases of Thyroid Gland	67	346	827	3 590	12·3	10·4	0·0	0·2	402	8	3	7
250–258	Diseases of Other Endocrine Glands	704	842	10 743	10 175	15·3	12·1	0·5	0·5	1 436	70	40	25
260–269	Avitaminoses and Other Nurtitional Deficiency	308	245	3 523	2 785	11·4	11·4	0·2	0·1	508	42	3	5
270–279	Other Metabolic Diseases	225	460	2 328	5 298	10·4	11·5	0·1	0·3	665	10	10	14

TABLE 4—*continued*

W.A. HOSPITALS—PATIENTS DISCHARGED DURING 1975—*continued*

I.C.D. Categories	Disease Groups	Number of Cases		Number of Days in Hospital		Average Number Days in Hospital		Per Cent of Total Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Transferred	Died	Deaths Per 1 000 Separations
Sec. IV													
280–289	Diseases of Blood and Blood Forming Organs	634	689	4 127	6 230	6·5	9·0	0·2	0·3	1 270	37	16	12
Sec. V													
290–299	Psychoses	590	542	10 877	12 036	18·4	22·2	0·6	0·6	980	143	9	7
300–309	Neuroses, Personality Disorders and Other Non-Psychotic Mental Disorders	2 583	2 256	33 854	26 140	13·1	11·6	1·7	1·3	4 590	238	11	2
310–315	Mental Retardation	18	13	121	216	6·7	16·6	0·0	0·0	27	4	....	....
Sec. VI													
320–324	Inflammatory Diseases of the Central Nervous System	98	98	1 244	1 216	12·7	12·4	0·1	0·1	147	34	15	76
330–333	Hereditary and Familial Diseases of Nervous System	34	21	655	807	19·3	38·4	0·0	0·0	50	2	3	54
340–349	Other Diseases of Central Nervous System	1 118	1 132	13 711	13 957	12·3	12·3	0·7	0·7	2 079	124	47	20
350–358	Diseases of Nerves and Peripheral Ganglia	632	824	4 935	5 933	7·8	7·2	0·3	0·3	1 422	31	3	2
360–369	Inflammatory Diseases of the Eye	502	447	2 493	2 492	5·0	5·6	0·1	0·1	931	16	2	2
370–379	Other Diseases and Conditions of the Eye	2 001	1 909	11 974	12 251	6·0	6·4	0·6	0·6	3 873	35	2	....
380–389	Diseases of the Ear and Mastoid Process	1 944	1 673	7 690	7 480	4·0	4·5	0·4	0·4	3 559	55	3	....
Sec. VII													
390–392	Active Rheumatic Fever	131	111	1 436	1 555	11·0	14·0	0·1	0·1	226	14	2	8
393–398	Chronic Rheumatic Heart Disease	108	105	1 519	1 241	14·1	11·8	0·1	0·1	198	5	10	46
400–404	Hypertensive Disease	615	881	5 532	9 459	9·0	10·7	0·3	0·5	1 432	43	21	14
410–414	Ischaemic Heart Disease	2 537	1 404	29 731	17 228	11·7	12·3	1·5	0·9	3 407	116	418	106
420–429	Other Forms of Heart Disease	1 603	1 157	21 566	14 954	13·4	12·9	1·1	0·8	2 375	131	254	92
430–438	Cerebrovascular Disease	1 193	958	28 333	26 875	23·8	28·0	1·4	1·4	1 554	186	411	191
440–448	Diseases of Arteries, Arterioles and Capillaries	610	307	13 409	7 027	22·0	22·9	0·7	0·4	766	50	101	110
450–458	Other Diseases of Circulatory System	1 900	2 627	21 041	27 267	11·1	10·4	1·1	1·4	4 397	65	65	14
Sec. VIII													
460–466	Acute Respiratory Infection (except Influenza	3 671	2 809	15 187	11 589	4·1	4·1	0·8	0·6	6 418	53	9	1
470–474	Influenza	643	825	3 262	4 500	5·1	5·4	0·2	0·2	1 450	14	4	2
480–486	Pneumonia	1 922	1 409	18 893	13 615	9·8	9·7	1·0	0·7	2 987	116	228	68
490–493	Bronchitis, Emphysema and Asthma	3 897	2 966	31 070	19 626	8·0	6·6	1·6	1·0	6 686	104	73	10
500–508	Other Diseases of Upper Respiratory Tract	4 429	4 138	14 119	13 713	3·2	3·3	0·7	0·7	8 545	18	4	....
510–519	Other Diseases of Respiratory System	1 878	1 397	18 716	11 886	10·0	8·5	0·9	0·6	3 118	82	75	22

TABLE 4—*continued*

W.A. HOSPITALS—PATIENTS DISCHARGED DURING 1975—*continued*

I.C.D. Categories	Disease Groups	Number of Cases		Number of Days in Hospital		Average Number Days in Hospital		Per Cent of Total Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Transferred	Died	Deaths Per 1 000 Separations
Sec. IX													
520–529	Diseases of Oral Cavity, Salivary Glands and Jaws	2 170	2 930	4 457	6 582	2·0	2·2	0·2	0·3	50 86	11	3	....
530–537	Diseases of Oesophagus, Stomach and Duodenum	1 859	996	16 056	7 663	8·6	7·7	0·8	0·4	2 739	72	44	15
540–543	Appendicitis	2 078	2 485	12 835	15 508	6·2	6·2	0·7	0·8	4 491	70	2	....
550–553	Hernia of Adbominal Cavity	2 575	858	19 926	7 671	7·7	8·9	1·0	0·4	3 389	39	5	1
560–569	Other Diseases of Intestine and Peritoneum	1 414	1 477	12 453	14 235	8·8	9·6	0·6	0·7	2 716	100	75	25
570–577	Diseases of Liver, Gall Bladder and Pancreas	1 358	2 413	16 488	27 513	12·1	11·4	0·8	1·4	3 598	101	72	19
Sec. X													
580–584	Nephritis and Nephrosis	424	774	2 998	2 674	7·1	3·4	0·2	0·1	1 153	21	24	20
590–599	Other Diseases of Urinary System	2 558	3 984	14 461	16 248	5·6	4·1	0·7	0·8	6 403	94	45	6
600–607	Diseases of Male Genital Organs	2 823	....	20 387	....	7·2	....	1·0	....	2 769	41	13	4
610–616	Diseases of Breast, Ovary, Fallopian Tube and Parametrium	94	4 006	422	23 075	4·5	5·8	0·0	1·2	4 064	34	2	....
620–629	Diseases of Uterus and Other Female Genital Organs	....	10 595	....	54 214	....	5·1	....	2·8	10 547	45	3	....
Sec. XI													
630–634	Complications of Pregnancy	....	3 519	....	13 340	....	3·8	....	0·7	3 305	214	....	....
635–639	Urinary Infections and Toxaemias of Pregnancy and Puerperium	....	1 247	....	6 579	....	5·3	....	0·3	1 187	60	....	....
640–645	Abortion	....	3 391	....	10 207	....	3·0	....	0·5	3 374	17	....	....
650–662	Delivery	....	20 381	....	180 160	....	8·8	....	9·1	20 182	194	5	....
670–678	Complications of the Puerperium	....	235	....	965	....	4·1	....	0·1	220	14	1	4
Sec. XII													
680–686	Infections of Skin and Subcutaneous Tissue	1 760	1 124	12 275	8 378	7·0	7·4	0·6	0·4	2 824	59	1	....
690–698	Other Inflammatory Conditions of Skin and Subcutaneous Tissue	365	361	3 444	2 859	9·4	7·9	0·2	0·1	715	9	2	2
700–709	Other Diseases of Skin and Subcutaneous Tissue	2 068	1 970	13 443	12 169	6·5	6·2	0·7	0·6	3 998	36	4	....
Sec. XIII													
710–718	Arthritis and Rheumatism except Rheumatic Fever	1 226	1 328	19 830	25 338	16·2	19·1	1·0	1·3	2 477	68	9	3
720–729	Osteomyelitis and Other Diseases of Bone and Joint	4 811	3 178	36 685	26 077	7·6	8·2	1·9	1·3	7 789	194	6	....
730–738	Other Diseases of Muscoluskeletal System	966	1 381	5 655	10 372	5·2	7·5	0·3	0·5	2 336	9	2	....

TABLE 4—*continued*

W.A. HOSPITALS—PATIENTS DISCHARGED DURING 1975—*continued*

I.C.D. Categories	Disease Groups	Number of Cases		Number of Days in Hospital		Average Number Days in Hospital		Per Cent of Total Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Transferred	Died	Deaths Per 1 000 Separations
Sec. XIV													
740–759	Congenital Anomalies	1 232	981	9 492	6 548	7·7	6·7	0·5	0·3	2 095	79	40	18
Sec. XV													
760–779	Certain Causes of Perinatal Morbidity and Mortality	458	390	5 507	5 477	12·0	14·0	0·3	0·3	729	84	35	41
Sec. XVI													
780–789	Symptoms Referable to Systems or Organs	7 813	8040	37 977	39 415	4·9	4·9	1·9	2·0	15 195	521	137	8
790–796	Ill-Defined Diseases	1 158	2 006	28 556	43 462	24·7	21·7	1·4	2·2	2 881	175	108	34
Sec. XVII													
800–809	Fracture of Skull, Spine and Trunk	1 621	679	16 898	8 045	10·4	11·8	0·9	0·4	2 094	167	39	16
810–819	Fracture of Upper Limb	1 960	1 363	8 471	6 400	4·3	4·7	0·4	0·3	3 224	99	....	....
820–829	Fracture of Lower Limb	1 791	1 189	34 234	30 001	19·1	25·2	1·7	1·5	2 610	314	56	18
830–839	Dislocation without Fracture	466	164	2 698	801	5·8	4·9	0·1	0·0	608	21	1	1
840–848	Sprains and Strains of Joints and Adjacent Muscles	466	269	2 834	1 510	6·1	5·6	0·1	0·1	726	8	1	1
850–854	Intracranial Injury (excluding those with Skull Fracture)	2 981	1 336	15 124	4 505	5·1	3·4	0·8	0·2	4 175	105	37	8
860–869	Internal Injury of Chest, Abdomen and Pelvis	271	113	3 157	1 685	11·7	14·9	0·2	0·1	349	18	17	44
870–879	Lacerations and Open Wound of Head, Neck and Trunk	1 036	545	4 546	2 163	4·4	4·0	0·2	0·1	1 559	20	2	1
880–887	Laceration and Open Wound of Upper Limb	1 286	357	4 290	1 587	3·3	4·4	0·2	0·1	1 611	31	1	....
890–897	Laceration and Open Wound of Lower Limb	737	384	5 046	2 330	6·8	6·1	0·3	0·1	1 094	26	1	....
900–907	Laceration and Open Wound of Multiple Location	216	118	1 427	702	6·6	6·0	0·1	0·0	322	11	1	2
910–918	Superficial Injury	322	125	1 430	442	4·4	3·5	0·1	0·0	436	11	....	....
920–929	Contusion and Crushing with Intact Skin Surface	761	397	3 732	2 207	4·9	5·6	0·2	0·1	1 128	30	....	....
930–939	Effects of Foreign Body Entering through Orifice	357	265	805	540	2·2	2·0	0·0	0·0	601	15	6	9
940–949	Burn	1 039	422	11 205	4 556	10·8	10·8	0·6	0·2	1 414	39	8	5
950–959	Injury to Nerves and Spinal Cord	100	37	916	223	9·2	6·0	0·0	0·0	130	6	1	7
960–979	Adverse Effect of Medicinal Agents	809	1 563	3 239	7 286	4·0	4·7	0·2	0·4	2 237	119	16	6
980–989	Toxic Effect of Substances Chiefly Non-Medicinal as to Source	814	466	2 008	1 197	2·5	2·6	0·1	0·1	1 257	17	6	4
990–999	Other Adverse Effects	2 711	1 676	16 904	11 766	6·2	7·0	0·9	0·6	4 212	138	37	8

TABLE 4—*continued*

W.A. HOSPITALS—PATIENTS DISCHARGED DURING 1975—*continued*

I.C.D. Categories	Disease Groups	Number of Cases		Number of Days in Hospital		Average Number Days in Hospital		Per Cent of Total Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Transferred	Died	Deaths Per 1 000 Separations
Sec. Y													
Y00–Y09	Examination and Investigation of Specific Systems without Reported Diagnosis	2 011	4 315	6 983	11 335	2·6	2·6	0·4	0·6	6 262	60	4	....
Y10–Y19	Other Examinations without Reported Diagnosis	17	11	111	46	6·5	4·2	0·0	0·0	25	3	....	....
Y20–Y29	Medical and Surgical Procedures without Reported Diagnosis	62	57	343	297	5·5	5·2	0·0	0·0	118	1	....	....
Y30–Y39	Medical and Surgical Aftercare without Current Complaint or Sickness	1 810	1 321	10 282	9 105	5·7	6·9	0·5	0·5	3 085	41	5	1
Y40–Y49	Persons Undergoing Preventive Measures	1 629	3 893	2 084	9 737	1·3	2·5	0·1	0·5	5 508	14	....	....
Y50–Y59	Elective Surgery	492	812	1 107	5 344	2·2	6·6	0·1	0·3	1 302	2	....	....
Y60–Y69	Maternal and Well-Baby Care	100	1 022	949	5 817	9·5	5·7	0·0	0·3	1 002	120	....	....
Y70–Y79	Other Persons without Current Complaint or Sickness	72	184	715	821	9·9	4·5	0·0	0·0	243	13	....	....
Y80–Y89	Healthy Live Born Infants according to Type of Birth	1	1	2	1	2·0	1·0	0·0	0·0	1	1	....	....
	Total	111 850	145 950	891 126	1 079 221	8·0	7·4	45·2	54·7	247 846	6 157	3 797	14·7
	Grand Total, Male and Female	257 800		1 970 347		7·6		100·0					

W.A. HOSPITALS 1975—AGE DISTRIBUTION OF PATIENTS DISCHARGED BY SEX AND PRINCIPAL CONDITION

I.C.D. Categories	Principal Condition	Age Groups															Not Stated	Total All Ages
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+		
	Males																	
000–136	Infective and Parasitic	2 487	573	346	245	341	254	155	143	114	117	100	85	117	113	168	17	5 375
140–239	Neoplasms	109	108	50	87	76	87	100	114	234	278	353	440	615	694	1 385	1	4 731
240–279	Endocrine, Nutritional, Metabolic	252	31	38	35	52	46	39	50	54	96	105	84	101	119	194	8	1 304
280–289	Blood and Blood Forming Organs	104	100	64	41	19	25	17	18	12	17	24	21	22	44	105	1	634
290–315	Mental Disorders	110	31	37	103	203	240	313	303	300	355	383	264	193	155	199	2	3 191
320–389	Nervous System and Sense Organs	1 094	831	351	241	278	316	312	294	317	350	339	314	340	335	605	12	6 329
390–458	Circulatory System	29	49	63	75	129	208	264	389	442	662	844	928	1 136	1 096	2 371	12	8 697
460–519	Respiratory System	5 135	2 780	1 078	707	697	586	476	386	361	401	424	517	596	739	1 531	26	16 440
520–577	Digestive System	865	798	804	781	851	866	656	606	619	823	813	674	696	673	921	8	11 454
580–629	Genito-Urinary System	600	272	192	290	426	335	338	264	423	274	306	416	404	492	861	6	5 899
680–709	Skin and Subcutaneous Tissue	453	287	292	391	432	342	255	206	191	263	233	218	202	167	244	17	4 193
710–738	Musculoskeletal System	97	144	184	386	648	722	668	666	616	584	557	477	444	351	450	9	7 003
740–759	Congenital Anomalies	509	285	158	78	40	29	20	17	24	11	16	14	10	6	16	....	1 233
760–779	Perinatal Morbidity	458	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	458
780–796	Symptoms and Illdefined Conditions	1 331	703	548	354	463	512	481	456	462	506	498	462	552	487	1 142	14	8 971
N800–N999	Accidents, Poisoning, Violence	1 985	1 468	1 680	2 767	2 876	1 971	1 370	1 035	903	879	694	527	450	382	705	52	19 744
Y00–Y89	Supplementary Classifications	659	150	145	326	412	674	791	677	529	401	315	290	259	262	300	4	6 194
	Total Males	16 277	8 610	6 030	6 907	7 943	7 213	6 255	5 624	5 601	6 017	6 004	5 731	6 137	6 115	11 197	189	111 850
	Rate/1 000 Males	291	156	107	128	158	139	150	157	175	188	208	268	307	389	516	N/A	195
	Females																	
000–136	Infective and Parasitic	2 097	509	328	417	400	313	200	148	109	132	117	81	119	94	252	14	5 330
140–239	Neoplasms	91	61	101	159	252	279	288	285	333	414	409	377	430	508	907	1	4 895
240–279	Endocrine, Nutritional, Metabolic	232	28	34	68	89	128	121	164	121	144	108	114	141	133	262	6	1 893
280–289	Blood and Blood Forming Organs	63	47	49	41	46	41	25	19	32	44	45	27	36	35	139	....	689
290–315	Mental Disorders	88	22	38	180	271	305	279	286	237	261	207	184	166	97	186	4	2 811
320–389	Nervous System and Sense Organs	934	635	313	225	290	326	327	397	322	355	351	296	294	282	748	9	6 104
390–458	Circulatory System	15	41	62	70	165	277	416	434	484	603	644	546	748	783	2 247	15	7 550
460–519	Respiratory System	3 379	2 247	1 004	1 067	851	722	569	388	345	368	382	392	423	399	982	26	13 544
520–577	Digestive System	514	726	864	1 324	1 282	1 026	647	622	561	627	601	489	556	390	920	10	11 159
580–629	Genito-Urinary System	136	126	169	1 256	2 330	3 172	2 620	2 191	2 188	1 762	1 596	599	423	287	491	13	19 359
630–678	Pregnancy and Childbirth	....	....	57	3 685	10 295	9 503	3 654	1 206	315	42	1	1	....	....	....	14	28 773
680–709	Skin and Subcutaneous Tissue	357	243	230	332	255	263	208	180	168	199	187	147	171	149	360	6	3 455
710–738	Musculoskeletal System	74	81	212	377	367	381	418	451	473	480	494	477	494	392	706	10	5 887
740–759	Congenital Anomalies	328	117	103	99	70	63	42	30	27	23	22	12	14	5	26	....	981
760–779	Perinatal Morbidity	387	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	390
780–796	Symptoms and Illdefined Conditions	1 205	623	547	793	857	864	662	563	444	516	487	411	484	439	1 119	32	10 046
N800–N999	Accidents, Poisoning, Violence	1 446	965	855	1 146	1 056	778	672	565	507	451	466	405	416	381	1 320	39	11 468
Y00–Y89	Supplementary Classifications	313	159	156	748	1 986	2 352	1 897	1 300	817	544	385	240	223	147	323	26	11 616
	Total including Pregnancy	11 659	6 630	5 122	11 987	20 862	20 793	13 045	9 229	7 483	6 965	6 502	4 797	5 138	4 521	10 988	228	145 950
	Rate/1 000 Females	221	126	96	236	512	446	354	277	256	240	242	219	244	262	352	N/A	265
	Total Female excluding Pregnancy	11 659	6 630	5 065	8 302	10 567	10 849	9391	8 023	7 168	6 923	6 501	4 797	5 138	4 521	10 988	228	117 177
	Rate/1 000 Females	221	126	95	163	226	232	255	240	245	239	242	219	244	262	352	N/A	213
	Total All Persons	27 936	15 240	11 152	18 894	28 805	28 006	19 300	14 853	13 084	12 982	12 506	10 529	11 275	10 636	22 185	417	257 800
	Rate/1 000 Persons	257	141	102	180	297	284	246	215	214	213	224	245	275	322	420	N/A	230

N/A = NOT APPLICABLE

TABLE 6

AGE AND SEX SPECIFIC DISCHARGE RATES*—W.A. HOSPITALS 1971-1975

Year	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+	N/S	Total
MALES																	
1971	279	144	98	115	134	123	122	132	144	159	182	217	272	322	456	N/A	173
1972	298	159	105	118	137	127	135	145	148	169	198	232	292	353	490	N/A	184
1973	308	156	104	123	146	127	135	151	159	171	204	240	292	368	491	N/A	188
1974	293	151	101	124	146	134	133	151	164	176	208	260	303	365	494	N/A	188
1975	291	156	107	128	158	139	150	157	175	188	208	268	307	389	516	N/A	195
FEMALES INCLUDING PREGNANCY																	
1971	212	123	87	230	441	436	323	239	188	183	189	183	201	231	327	N/A	239
1972	222	134	98	241	449	453	336	261	211	192	208	199	220	257	340	N/A	254
1973	236	130	93	243	443	441	337	273	216	206	216	214	236	271	347	N/A	258
1974	223	124	91	240	452	438	352	269	233	229	229	209	226	254	343	N/A	259
1975	221	126	96	236	512	446	352	277	256	240	242	219	244	262	352	N/A	265
FEMALES EXCLUDING PREGNANCY																	
1971	212	123	86	142	180	189	195	181	172	181	189	183	201	231	327	N/A	177
1972	222	134	97	153	201	222	221	211	196	190	208	199	220	257	340	N/A	195
1973	236	130	92	158	212	226	234	227	204	204	216	214	236	271	347	N/A	203
1974	223	124	90	160	223	231	249	230	225	228	220	209	226	254	343	N/A	205
1975	221	126	95	163	226	232	255	240	245	239	242	219	244	262	352	N/A	213
TOTAL ALL PERSONS																	
1971	247	134	93	171	280	268	218	183	165	170	185	200	236	276	381	N/A	205
1972	261	147	101	178	286	278	230	200	178	180	203	216	256	307	403	N/A	218
1973	273	143	99	181	289	273	231	210	186	188	210	227	264	319	407	N/A	222
1974	259	138	96	180	293	277	236	208	197	201	214	234	264	307	406	N/A	223
1975	257	141	102	180	297	284	246	215	214	213	224	245	275	322	420	N/A	230

* All rates per 1 000 population, based on Australian Bureau of Statistics data:
1971—actual Census
1972–75—estimated, subject to revision after 1976 Census
N/A—Not Applicable

TABLE 7

BIRTH RATES AND RELATED HOSPITAL DISCHARGES

W.A.—1971-75

Year	Total Births	Birth Rate* Per 1 000		Hospital Discharge Rate for pregnancy and childbirth (ICD 630–678) Per 1 000 Females Aged 15–44
		Mean Population	Females Aged 15–44	
1971	24 537	23·8	111·5	142·6
1972	22 435	21·3	99·7	134·5
1973	20 780	19·4	89·9	125·5
1974	20 481	18·7	85·5	122·1
1975	20 574	18·3	83·0	117·5

* (TOTAL BIRTHS);
all rates calculated from A.B.S. population data:

1971—Actual Census
1972–75—Estimated, subject to revision after 1976 Census.

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TABLE 8

W.A. HOSPITALS 1975—AGE DISTRIBUTION OF ABORIGINES DISCHARGED BY SEX AND PRINCIPAL CONDITION

I.C.D. Categories	Principal Condition	Age Groups																Total All Ages
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+	Not Stated	
	MALES																	
000–136	Infective and Parasitic	887	79	38	22	13	17	10	10	17	14	6	4	8	8	7	14	1 154
140–239	Neoplasms	....	2	....	1	1	1	....	1	1	3	....	2	4	2	3	....	21
240–279	Endocrine, Nutritional, Metabolic	59	2	1	....	4	1	3	8	11	19	8	3	10	10	15	5	159
280–289	Blood and Blood Forming Organs	28	16	9	2	2	5	3	2	1	2	1	....	1	1	....	1	74
290–315	Mental Disorders	2	2	3	3	12	19	31	9	24	24	3	3	7	4	2	....	148
320–389	Nervous System and Sense Organs	275	99	44	23	15	19	30	31	28	27	16	8	12	10	16	11	664
390–458	Circulatory System	7	9	15	7	7	6	8	21	24	21	19	27	17	14	38	7	247
460–519	Respiratory System	1 114	198	77	49	55	45	38	45	56	43	27	38	42	38	47	18	1 930
520–577	Digestive System	62	28	16	7	22	14	23	18	12	17	9	7	3	4	6	3	251
580–629	Genito-Urinary System	55	35	18	5	6	8	8	8	6	5	3	6	8	7	8	3	189
680–709	Skin and Subcutaneous Tissue	141	75	35	18	25	34	18	19	24	18	14	7	10	16	15	14	483
710–738	Musculoskeletal System	8	24	10	6	10	19	16	12	15	13	5	4	2	4	4	4	156
740–759	Congenital Anomalies	22	5	1	....	....	....	....	....	1	....	....	....	....	....	....	....	29
760–779	Perinatal Morbidity	39	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	39
780–796	Symptoms and Illdefined Conditions	217	86	56	39	39	33	37	39	39	39	19	23	28	29	41	9	773
N800–N999	Accidents, Poisoning, Violence	196	121	97	118	161	114	108	91	97	50	30	25	17	19	20	23	1 287
Y00–Y89	Supplementary Classifications	51	9	6	9	5	7	6	7	9	10	5	4	6	4	9	3	150
	Male Total	3 163	790	426	309	377	342	339	321	365	305	165	161	175	170	231	115	7 754
	FEMALES																	
000–136	Infective and Parasitic	776	72	31	33	29	13	13	11	11	14	9	4	8	6	11	10	1 051
140–239	Neoplasms	1	1	1	3	4	4	3	16	8	10	5	1	3	3	4	....	67
240–279	Endocrine, Nutritional, Metabolic	41	4	2	3	1	5	14	17	13	16	13	13	23	9	12	6	192
280–289	Blood and Blood Forming Organs	29	3	2	13	8	15	4	4	3	5	3	3	2	2	3	....	99
290–315	Mental Disorders	3	....	4	11	10	13	15	14	9	6	5	....	1	4	7	3	105
320–389	Nervous System and Sense Organs	214	111	48	18	21	19	13	24	13	15	10	5	9	3	7	5	535
390–458	Circulatory System	3	12	14	7	10	7	8	16	20	26	12	6	23	15	17	10	206
460–519	Respiratory System	848	200	69	64	66	55	46	54	50	45	45	37	46	23	27	19	1 694
520–577	Digestive System	30	23	22	31	27	33	26	19	21	10	16	5	9	6	8	3	289
580–629	Genito-Urinary System	22	14	15	94	79	81	44	41	36	11	8	4	13	3	4	4	473
630–678	Pregnancy and Childbirth	....	....	17	467	462	258	117	62	21	6	....	....	....	....	....	8	1 418
680–709	Skin and Subcutaneous Tissue	110	72	36	27	29	27	26	18	17	13	10	8	14	11	13	5	436
710–738	Musculoskeletal System	6	11	10	10	7	14	8	12	11	8	7	5	5	7	4	6	131
740–759	Congenital Anomalies	14	6	2	1	2	1	....	2	....	1	....	....	....	....	....	....	29
760–779	Perinatal Morbidity	33	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	33
780–796	Symptoms and Illdefined Conditions	229	94	58	82	82	63	48	44	25	41	25	15	26	25	38	26	921
N800–N999	Accidents, Poisoning, Violence	164	97	50	105	134	137	119	94	74	60	36	19	33	13	23	28	1 186
Y00–Y89	Supplementary Classifications	60	15	11	89	85	72	41	48	15	6	3	2	5	4	7	17	480
	Female Total	2 583	735	392	1 058	1 056	817	545	496	347	293	207	127	220	134	185	150	9 345
	Grand Total—Male and Female	5 746	1 525	818	1 367	1 433	1 159	884	817	712	598	372	288	395	304	416	265	17 099

TABLE 9

W.A. HOSPITALS 1975—AGE DISTRIBUTION OF NON-ABORIGINES DISCHARGED BY SEX AND PRINCIPAL CONDITION

I.C.D. Categories	Principal Condition	Age Groups															Total All Ages
		0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+	Not Stated	
	MALES																	
000–136	Infective and Parasitic	1 600	494	308	223	328	237	145	133	97	103	94	81	109	105	161	3	4 221
140–239	Neoplasms	109	106	50	86	75	86	100	113	233	275	353	438	611	692	1 382	1	4 710
240–279	Endocrine, Nutritional, Metabolic	193	29	37	35	48	45	36	42	43	77	97	81	91	109	179	3	1 145
280–289	Blood and Blood Forming Organs	76	84	55	39	17	20	14	16	11	15	23	21	21	43	105	....	560
290–315	Mental Disorders	108	29	34	100	191	221	282	294	276	331	380	261	186	151	197	2	3 043
320–389	Nervous System and Sense Organs	819	732	307	218	263	297	282	263	289	323	323	306	328	325	589	1	5 665
390–458	Circulatory System	22	40	48	68	122	202	256	368	418	641	825	901	1 119	1 082	2 333	5	8 450
460–519	Respiratory System	4 021	2 582	1 001	658	642	541	438	341	305	358	397	479	554	701	1 484	8	14 510
520–577	Digestive System	803	770	788	774	829	852	633	588	607	806	804	667	693	669	915	5	11 203
580–629	Genito-Urinary System	545	237	174	285	420	327	330	256	417	269	303	410	396	485	853	3	5 710
680–709	Skin and Subcutaneous Tissue	312	212	257	373	407	308	237	187	167	245	219	211	192	151	229	3	3 710
710–738	Musculoskeletal System	89	120	174	380	638	703	652	654	601	571	552	473	442	347	446	5	6 847
740–759	Congenital Anomalies	487	280	157	78	40	29	20	17	23	11	16	14	10	6	16	....	1 204
760–779	Perinatal Morbidity	419	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	419
780–796	Symptoms and Illdefined Conditions	1 114	617	492	315	424	479	444	417	423	467	479	439	524	458	1 101	5	8 198
N800–N999	Accidents, Poisoning, Violence	1 789	1 347	1 583	2 649	2 715	1 857	1 262	944	806	829	664	502	433	363	685	29	18 457
Y00–Y89	Supplementary Classifications	608	141	139	317	407	667	785	670	520	391	310	286	253	258	291	1	6 044
	Male Total	13 114	7 820	5 604	6 598	7 566	6 871	5 916	5 303	5 236	5 712	5 839	5 570	5 962	5 945	10 966	74	104 096
	FEMALES																	
000–136	Infective and Parasitic	1 321	437	297	384	371	300	187	137	98	118	108	77	111	88	241	4	4 279
140–239	Neoplasms	90	60	100	156	248	275	285	269	325	404	404	376	427	505	903	1	4 828
240–279	Endocrine, Nutritional, Metabolic	191	24	32	65	88	123	107	147	108	128	95	101	118	124	250	....	1 701
280–289	Blood and Blood Forming Organs	34	44	47	28	38	26	21	15	29	39	42	24	34	33	136	....	590
290–315	Mental Disorders	85	22	34	169	261	292	264	272	228	255	202	184	165	93	179	1	2 706
320–389	Nervous System and Sense Organs	720	524	265	207	269	307	314	373	309	340	341	291	285	279	741	4	5 569
390–458	Circulatory System	12	29	48	63	155	270	408	418	464	577	632	540	725	768	2 230	5	7 344
460–519	Respiratory System	2 531	2 047	935	1 003	785	667	523	334	295	323	337	355	377	376	955	7	11 850
520–577	Digestive System	484	703	842	1 293	1 255	993	621	603	540	617	585	484	547	384	912	7	10 870
580–629	Genito-Urinary System	114	112	154	1 162	2 251	3 091	2 576	2 150	2 152	1 751	1 588	595	410	284	487	9	18 886
630–678	Pregnancy and Childbirth	....	....	40	3 218	9 833	9 245	3 537	1 144	294	36	1	1	....	....	....	6	27 355
680–709	Skin and Subcutaneous Tissue	247	171	194	305	226	236	182	162	151	186	177	139	157	138	347	1	3 019
710–738	Musculoskeletal System	68	70	202	367	360	367	410	439	462	472	487	472	489	385	702	4	5 756
740–759	Congenital Anomalies	314	111	101	98	68	62	42	28	27	22	22	12	14	5	26	....	952
760–779	Perinatal Morbidity	354	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	357
780–796	Symptoms and Illdefined Conditions	976	529	489	711	775	801	614	519	419	475	462	396	458	414	1 081	6	9 125
N800–N999	Accidents, Poisoning, Violence	1 282	868	805	1 041	922	641	553	471	433	391	430	386	383	368	1 297	11	10 282
Y00–Y89	Supplementary Classifications	253	144	145	659	1 901	2 280	1 856	1 252	802	538	382	238	218	143	316	9	11 136
	Female Total	9 076	5 895	4 730	10 929	19 806	19 976	12 500	8 733	7 136	6 672	6 295	4 671	4 918	4 387	10 803	78	136 605
	Grand Total, Male and Female	22 190	13 715	10 334	17 527	27 372	26 847	18 416	14 036	12 372	12 384	12 134	10 241	10 880	10 332	21 769	152	240 701

TABLE 10

W.A. HOSPITALS 1975—PATIENTS DISCHARGED BY RACE AND PRINCIPAL CONDITION

I.C.D. Categories	Principal Condition Groups	Discharges					Days in Hospital					Average Number of Days in Hospital			% of Total Bed Days		
		Aboriginal		Non-Aboriginal		Total	Aboriginal		Non-Aboriginal		Total	Aboriginal	Non-Aboriginal	Total	Aboriginal	Non-Aboriginal	Total
		Number	% for Group	Number	% for Group		Number	% for Group	Number	% for Group							
000–136	Infective and Parasitic	2 205	20·6	8 500	79·4	10 705	22 641	30·7	51 057	69·3	73 698	10·3	6·0	6·9	1·15	2·59	3·74
140–239	Neoplasms	88	0·9	9 538	99·1	9 626	1 497	1·2	119 030	98·8	120 527	17·0	12·5	12·5	0·08	6·04	6·12
240–279	Endocrine, Nutritional, Metabolic	351	11·0	2 846	89·0	3 197	7 059	18·0	32 210	82·0	39 269	20·1	11·3	12·3	0·36	1·63	1·99
280–289	Blood and Blood Forming Organs	173	13·1	1 150	86·9	1 323	2 021	19·5	8 336	80·5	10 357	11·7	7·2	7·8	0·10	0·42	0·53
290–315	Mental Disorders	253	4·2	5 749	95·8	6 002	2 640	3·2	80 604	96·8	83 244	10·4	14·0	13·9	0·13	4·09	4·22
320–389	Nervous System and Sense Organs	1 199	9·6	11 234	90·4	12 433	9 698	11·2	77 140	88·8	86 838	8·1	6·9	7·0	0·49	3·92	4·41
390–458	Circulatory System	453	2·8	15 794	97·2	16 247	8 162	3·6	220 011	96·4	228 173	18·0	13·9	14·0	0·41	11·17	11·58
460–519	Respiratory System	3 624	12·1	26 360	87·9	29 984	29 506	16·7	146 670	83·3	176 176	8·1	5·6	5·9	1·50	7·44	8·94
520–577	Digestive System	540	2·4	22 073	97·6	22 613	3 935	2·4	157 452	97·6	161 387	7·3	7·1	7·1	0·20	7·99	8·19
580–629	Genito-Urinary System	662	2·6	24 596	97·4	25 258	4 926	3·7	129 553	96·3	134 479	7·4	5·3	5·3	0·25	6·58	6·83
630–678	Pregnancy and Childbirth	1 418	4·9	27 355	95·1	28 773	11 677	5·5	199 574	94·5	211 251	8·2	7·3	7·3	0·59	10·13	10·72
680–709	Skin and Subcutaneous Tissue	919	12·0	6 729	88·0	7 648	7 671	14·6	44 897	85·4	52 568	8·3	6·7	6·9	0·39	2·28	2·67
710–738	Musculoskeletal System	287	2·2	12 603	97·8	12 890	2 808	2·3	121 149	97·7	123 957	9·8	9·6	9·6	0·14	6·15	6·29
740–759	Congenital Anomalies	58	2·6	2 156	97·4	2 214	935	5·8	15 105	94·2	16 040	16·1	7·0	7·2	0·05	0·77	0·81
760–779	Perinatal Morbidity	72	8·5	776	91·5	848	1 868	17·0	9 116	83·0	10 984	25·9	11·7	13·0	0·09	0·46	0·56
780–796	Symptoms and Illdefined Conditions	1 694	8·9	17 323	91·1	19 017	15 507	10·4	133 903	89·6	149 410	9·2	7·7	7·9	0·79	6·80	7·58
N800–N999	Accidents, Poisoning, Violence	2 473	7·9	28 739	92·1	31 212	20 340	9·0	206 570	91·0	226 910	8·2	7·2	7·3	1·03	10·48	11·52
Y00–Y89	Supplementary Classifications	630	3·5	17 180	96·5	17 180	5 423	8·3	59 656	91·7	65 079	8·6	3·5	3·7	0·28	3·03	3·30
	Total	17 099	6·6	240 701	93·4	257 800	158 314	8·0	1 812 033	92·0	1 970 347	9·3	7·5	7·6	8·03	91·97	100·00

TABLE 11

W.A. HOSPITALS 1975—PATIENTS DISCHARGED BY PRINCIPAL CONDITION AND TYPE OF HOSPITAL

I.C.D. Categories	Principal Condition Groups	Discharges							Days in Hospital							Average Number of Days in Hospital				Percentage of Total Bed Days			
		Teaching		Private		Other Govt. and Board		All Hospitals	Teaching		Private		Other Govt. and Board		All Hospitals	Teaching	Private	Other Govt. and Board	All Hospitals	Teaching	Private	Other Govt. and Board	All Hospitals
		No.	% for Group	No.	% for Group	No.	% for Group		No.	% for Group	No.	% for Group	No.	% for Group									
000–136	Infective and Parasitic	3 051	28·59	968	9·04	6 676	62·36	10 705	29 452	39·96	4 482	6·08	39 764	53·96	73 698	9·6	4·6	6·0	6·9	1·49	0·23	2·02	3·74
140–239	Neoplasms	5 188	53·90	1 910	19·84	2 528	26·26	9 626	73 864	61·28	16 907	14·03	29 756	24·69	120 527	14·2	8·9	11·8	12·5	3·75	0·86	1·51	6·12
240–279	Endocrine, Nutritional, Metabolic	1 165	36·44	524	16·39	1 508	47·17	3 197	13 659	34·81	5 469	13·93	20 131	51·26	39 269	11·7	10·4	13·3	12·3	0·69	0·28	1·02	1·99
280–289	Blood and Blood Forming Organs	536	40·51	191	14·44	596	45·05	1 323	4 380	42·29	1 051	10·24	4 916	47·47	10 357	8·2	5·6	8·2	7·8	0·22	0·05	0·25	0·53
290–315	Mental Disorders	2 307	38·44	1 322	22·03	2 373	39·54	6 002	32 957	39·59	21 095	25·34	29 192	35·07	83 244	14·3	16·0	12·3	13·9	1·67	1·07	1·48	4·22
320–389	Nervous System and Sense Organs	4 750	38·20	3 961	31·86	3 722	29·94	12 433	40 315	46·43	16 638	19·16	29 885	34·41	86 838	8·5	4·2	8·0	7·0	2·05	0·84	1·52	4·41
390–458	Circulatory System	7 071	43·52	2 382	14·66	6 794	41·82	16 247	104 485	45·79	25 942	11·37	97 745	42·84	228 173	14·8	10·9	14·4	14·0	5·30	1·32	4·96	11·58
460–519	Respiratory System	7 578	25·27	5 901	19·68	16 505	55·05	29 984	45 044	25·57	24 103	13·68	107 029	60·75	176 176	5·9	4·1	6·5	5·9	2·29	1·22	5·43	8·94
520–577	Digestive System	6 327	27·98	6 135	27·13	10 151	44·89	22 613	55 683	34·50	40 818	25·29	64 886	40·21	161 387	8·8	6·7	6·4	7·1	2·83	2·07	3·29	8·19
580–629	Genito-Urinary System	8 513	33·70	6 633	26·26	10 112	40·03	25 258	39 813	29·61	40 829	30·36	53 837	40·03	134 479	4·7	6·2	5·3	5·3	2·02	2·07	2·73	6·83
630–678	Pregnancy and Childbirth	6 313	21·94	7 398	25·71	15 062	52·35	28 773	44 544	21·09	58 902	27·88	107 805	51·03	211 251	7·1	8·0	7·2	7·3	2·26	2·99	5·47	10·72
680–709	Skin and Subcutaneous Tissue	1 269	16·59	2 165	28·31	4 214	55·10	7 648	13 469	25·62	10 484	19·94	28 615	54·43	52 568	10·6	4·8	6·8	6·9	0·68	0·53	1·45	2·67
710–738	Musculoskeletal System	3 903	30·28	4 486	34·80	4 501	34·92	12 890	53 525	43·18	29 846	24·08	40 586	32·74	123 957	13·7	6·7	9·0	9·6	2·72	1·51	2·06	6·29
740–759	Congenital Anomalies	1 446	65·31	421	19·02	347	15·67	2 214	12 556	78·28	1 634	10·19	1 850	11·53	16 040	8·7	3·9	5·3	7·2	0·64	0·08	0·09	0·81
760–779	Perinatal Morbidity	257	30·31	267	31·49	324	38·21	848	4 463	40·63	2 771	25·23	3 750	34·14	10 984	17·4	10·4	11·6	13·0	0·23	0·14	0·19	0·56
780–796	Symptoms and Illdefined Conditions	5 027	26·43	2 319	12·19	11 671	61·37	19 017	27 496	18·40	29 123	19·49	92 789	62·10	149 410	5·5	12·6	8·0	7·9	1·40	1·48	4·71	7·58
N800–N999 Y00–Y89	Accidents, Poisoning, Violence	14 028	44·94	2 305	7·38	14 879	47·67	31 212	134 172	59·13	15 339	6·76	77 399	34·11	226 910	9·6	6·7	5·2	7·3	6·81	0·78	3·93	11·52
	Supplementary Classifications	3 044	17·09	7 119	39·97	7 647	42·94	17 810	15 950	24·51	22 707	34·89	26 422	40·60	65 079	5·2	3·2	3·5	3·7	0·81	1·15	1·34	3·30
	Total	81 783	31·72	56 407	21·88	119 610	46·40	257 800	745 837	37·85	368 152	18·68	856 358	43·46	1970347	9·1	6·5	7·2	7·6	37·85	18·68	43·46	100·00

TABLE 12.

W.A. HOSPITALS 1975—PATIENTS DISCHARGED BY PRINCIPAL CONDITION AND TYPE OF HOSPITAL

I.C.D. Categories	Principal Condition Groups	Discharges														State Total
		Metropolitan								Country						
		Teaching		Government		Private		Total		Govt. and Board		Private		Total		
		No.	% of Group	No.	% of Group	No.	% of Group	No.	% of Group	No.	% of Group	No.	% of Group	No.	% of Group	
000–136	Infective and Parasitic	3 061	28·59	969	9·05	624	5·83	4 654	43·48	5 707	53·31	344	3·21	6 051	56·52	10 705
140–239	Neoplasms	5 188	53·90	1 711	17·77	1 827	18·98	8 726	90·65	817	8·49	83	0·86	900	9·35	9 626
240–279	Endocrine, Nutritional, Metabloic	1 165	36·44	355	11·10	471	14·73	1 991	62·28	1 153	36·07	53	1·66	1 206	37·72	3 197
280–289	Blood and Blood Forming Organs	536	40·51	139	10·51	166	12·55	841	63·57	457	34·54	25	1·89	482	36·43	1 323
290–315	Mental Disorders	2 307	38·44	914	15·23	1 252	20·86	4 473	74·53	1 459	24·31	70	1·17	1 529	25·47	6 002
320–389	Nervous System and Sense Organs	4 750	38·20	1 000	8·04	3 799	30·56	9 549	76·80	2 722	21·89	162	1·30	2 884	23·20	12 433
390–458	Circulatory System	7 071	43·52	2 425	14·93	2 102	12·94	11 598	71·89	4 369	26·89	280	1·72	4 649	28·61	16 247
460–519	Respiratory System	7 578	25·27	3 189	10·64	5 107	17 03	15 874	52·94	13 316	44·41	794	2·65	14 110	47·06	29 984
520–577	Digestive System	6 327	27·98	4 060	17·95	5 296	23·42	15 683	69·35	6 091	26·94	839	3·71	6 930	30·65	22 613
580–629	Genito-Urinary System	8 513	33·70	4 923	19·49	6 188	24·50	19 624	77·69	5 189	20·54	445	1·76	5 634	22·31	25 258
630–678	Pregnancy and Childbirth	6 313	21·94	7 372	25·62	6 815	23·69	20 500	71·25	7 690	26·73	583	2·03	8 273	28·75	28 773
680–709	Skin and Subcutaneous Tissue	1 269	16·59	1 200	15·69	1 991	26·03	4 460	58·32	3 014	39·41	174	2·28	3 188	41·68	7 648
710–738	Musculoskeletal System	3 903	30·28	1 883	14·61	4 271	33·13	10 057	78·02	2 618	20·31	215	1·67	2 833	21·98	12 890
740–759	Congenital Anomalies	1 446	65·31	202	9·12	396	17·89	2 044	92·32	145	6·55	25	1·13	170	7·68	2 214
760–779	Perinatal Morbidity	257	30·31	145	17·10	232	27·36	634	74·76	179	21·11	35	4·13	214	25·24	848
780–796	Symptoms and Illdefined Conditions	5 027	26·43	1 629	8·57	1 735	9·12	8 391	44·12	10 042	52·81	584	3·07	10 626	55·88	19 017
N800–N999	Accidents, Poisoning, Violence	14 028	44·94	1 958	6·27	1 848	5·92	17 834	57·14	12 921	41·40	457	1·46	13 378	42·86	31 212
Y00–Y89	Supplementary Classifications	3 044	17·09	4 092	22·98	6 702	37·83	13 838	77·70	3 555	19·96	417	2·34	3 972	22·30	17 810
	Total	81 783	31·72	38 166	14·80	50 822	19·71	170 771	66·24	81 444	31·59	5 585	2·17	87 029	33·76	257 800

TABLE 13

W.A. HOSPITALS—OPERATION CASES DISCHARGED DURING 1975

Code of Surgical Procedures	Operation Group	Number of Cases		Number Days in Hospital		Average Number Days in Hospital		Per cent Operation Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Transferred	Died	Deaths per 1 000 Separations
Sec. I													
001–019	Skull, Brain and Cerebral Meninges	232	143	8 617	4 769	37·1	33·3	1·0	0·5	296	34	45	120
020–029	Spine and Spinal Cord	1 560	935	15 298	10 008	9·8	10·7	1·7	1·1	2 398	84	13	5
030–035	Cranial Nerves	34	54	195	129	5·7	2·4	0·0	0·0	86	2	....	....
036–039	Autonomic Nervous System (Sympathetic and Parasympathetic)	174	119	3 174	2 066	18·2	17·4	0·4	0·2	284	2	7	24
040–049	Peripheral Nerves	424	587	2 094	2 799	4·9	4·8	0·2	0·3	1 008	3	....	....
Sec. II													
061–063	Pituitary	8	10	148	210	18·5	21·0	0·0	0·0	17	1	....	....
065–069	Adrenal	....	5	....	206	....	41·2	....	0·0	5	....	....	....
071–076	Thyroid and Parathyroid	43	215	458	1 848	10·7	8·6	0·1	0·2	256	1	1	4
077–079	Thymus and Carotid Body	2	2	85	119	42·5	59·9	0·0	0·0	4	....	....	....
080–089	Surgery of Neck	275	232	4 238	2 732	15·4	11·8	0·5	0·3	468	14	25	49
Sec. III													
100–109	Orbit and Globe	56	35	476	438	8·5	12·5	0·1	0·1	88	3	....	....
110–115	Eye Muscles of Globe	359	382	1 489	1 466	4·1	3·8	0·2	0·2	741	....	....	....
117–129	Eyelids	370	444	2 209	2 507	6·0	5·6	0·3	0·3	806	6	2	2
132–139	Conjunctiva	567	329	1 475	829	2·6	2·5	0·2	0·1	890	5	1	1
140–149	Cornea	129	58	1 216	647	9·4	11·2	0·1	0·1	184	3	....	....
150–159	Iris and Ciliary Body	85	88	866	954	10·2	10·8	0·1	0·1	172	1	....	....
160–169	Sclera, Choroid, Retina and Vitreous	132	106	948	830	7·2	7·8	0·1	0·1	235	3	....	....
170–179	Lens	448	526	5 312	6 116	11·9	11·6	0·6	0·7	955	17	2	2
180–189	Lacrimal Apparatus	158	194	302	596	1·9	3·1	0·0	0·1	352	....	....	....
Sec. IV													
190–209	Ear	1 490	1 116	5 218	4 215	3·5	3·6	0·6	0·5	2 620	34	2	1
210–224	Nose	1 972	1 378	7 311	6 093	3·7	4·4	0·8	0·7	3 337	11	2	1
225–229	Accessory Air Sinuses and Other Parts of Face	116	97	497	470	4·3	4·8	0·1	0·1	212	1	....	....
230–239	Naso-pharynx	2 804	3 197	7 710	9 561	2·7	3·0	0·9	1·1	5 997	1	....	....
240–249	Larynx and Trachea	355	146	3 837	1 071	10·8	7·3	0·4	0·1	471	12	18	36
Sec. V													
250–259	Teeth and Jaws	2 011	2 696	4 968	5 166	2·5	1·9	0·6	0·6	4 697	8	2	....
260–267	Tongue and Mouth	162	135	957	575	5·9	4·3	0·1	0·1	297	....	....	....
270–273	Salivary Glands (Parotid, Sublingual, Submandibular Glands)	73	74	451	466	6·2	6·3	0·1	0·1	147	....	....	....
280–283	Pharynx	28	10	332	63	11·9	6·3	0·0	0·0	38	....	....	....
290–299	Oesophagus	332	285	2 310	1 502	7·0	5·3	0·3	0·2	596	6	15	24

TABLE 13—*continued*

W.A. HOSPITALS—OPERATION CASES DISCHARGED DURING 1975

Code of Surgical Procedures	Operation Group	Number of Cases		Number Days in Hospital		Average Number Days in Hospital		Per cent Operation Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Transferred	Died	Deaths per 1 000 Separations
Sec. VI													
300–309	Heart	397	241	4 314	2 540	10·9	10·5	0·5	0·3	572	46	20	31
320–329	Intra Thoracic Vessels	39	24	440	260	11·3	10·8	0·1	0·0	55	4	4	63
330–339	Thoracic Cage	203	118	3 759	2 334	18·5	19·8	0·4	0·3	288	10	23	72
340–349	Lung and Bronchus	326	106	5 616	1 745	17·2	16·5	0·3	0·2	408	6	18	42
Sec. VII													
380–389	Breast	106	2 355	493	14 395	4·7	6·1	0·1	1·6	2 453	8	....	....
Sec. VIII													
400–409	Abdominal Wall	282	1 360	5 419	10 469	19·2	7·7	0·6	1·2	1 539	28	75	46
410–419	Hernia	2 412	708	19 086	6 522	7·9	9·2	2·2	0·7	3 088	27	5	2
420–439	Stomach	1 005	629	11 095	5 939	11·0	9·4	1·3	0·7	1 570	35	29	18
440–445	Appendix	1 845	2 336	12 037	15 239	6·5	6·5	1·4	1·7	4 149	30	2	....
446	Other Diverticulae	6	7	39	49	6·5	7·0	0·0	0·0	13	....	....	....
450–469	Small Intestine—Colon	592	662	9 015	9 822	15·2	14·8	1·1	1·1	1 178	21	55	44
470–479	Rectum	149	127	2 089	2 125	14·0	16·7	0·2	0·2	268	5	3	11
480–499	Anus	1 434	974	11 690	7 606	8·2	7·8	1·3	0·9	2 388	19	1	....
500–509	Liver	86	69	974	1 096	11·3	15·9	0·1	0·1	148	2	5	32
510–519	Bile Ducts	29	45	525	999	18·1	22·2	0·1	0·1	72	2	....	....
520–529	Gall Bladder	452	1 424	6 678	19 192	14·8	13·5	0·8	2·2	1 842	21	13	7
530–539	Pancreas	11	8	292	306	26·5	38·3	0·0	0·0	16	1	2	105
540–549	Spleen and Abdominal Venous System	56	32	1 511	700	27·0	21·9	0·2	0·1	78	2	8	91
550–559	Abdominal Structures, N.E.C.	92	28	1 809	428	19·7	15·3	0·2	0·1	102	....	18	150
Sec. IX													
560–579	Kidney	315	265	4 110	3 636	13·0	13·7	0·5	0·4	554	17	9	16
580–589	Ureter	271	191	2 995	1 785	11·1	9·3	0·3	0·2	454	7	1	2
600–619	Urinary Bladder	2 466	1 574	12 350	6 461	5·0	4·1	1·4	0·7	3 969	44	27	7
620–629	Urethra	497	149	3 432	926	6·9	6·2	0·4	0·1	633	9	4	6
630–637	Prostate	911	....	16 976	....	18·6	....	1·9	....	858	32	21	23
639	Seminal Vessicles	1	....	18	....	18·0	....	0·0	....	1	....	....	....
640–669	Testis, Epididymis, and Scrotum	3 824	....	10 346	....	2·7	....	1·2	....	3 816	6	2	1
Sec. X													
671–679	Ovary	....	434	....	4 136	....	9·5	....	0·5	430	3	1	2
681–689	Oviduct (Fallopian Tube)	....	5 291	....	25 679	....	4·9	....	2·9	5 264	25	2	....
690–709	Uterus (Hysterectomy)	....	12 654	....	54 485	....	4·3	....	6·2	12 615	35	4	....
710–729	Vagina	....	706	....	7 916	....	11·2	....	0·9	699	5	2	3
730–739	Introitus, Vulva, Labia and Perineum	....	540	....	2 289	....	4·2	....	0·3	535	4	1	2

Sec. XI														
740–750	Ante-Natal Obstetric Operations	....	2 080	....	7 431	....	3·6	....	0·8	2 073	7	....	....	
751–769	Delivery Obstetric Operations	....	5 672	....	59 014	....	10·4	....	6·7	5 618	51	3		1
770–779	Post-Natal or Post-Abortion Obstetric Operations	....	1 728	....	7 231	....	4·2	....	0·8	1 718	10	....	....	
Sec. XII														
780–788	Treatment of Fractures	2 733	1 803	31 115	25 609	11·4	14·2	3·5	2·9	4 329	166	41		9
790–799	Bone	742	756	11 202	10 518	15·1	13·9	1·3	1·2	1 457	29	12		8
800–822	Joints	3 352	2 599	27 594	27 039	8·2	10·4	3·1	3·1	5 858	77	16		3
825–826	Capsule and Ligaments of Joints	74	45	588	321	7·9	7·1	0·1	0·0	118	1	....	....	
827–828	Bursae	87	41	459	283	5·3	6·9	0·1	0·0	127	1	....	....	
830–839	Muscles	74	58	877	821	11·9	14·2	0·1	0·1	129	3	....	....	
840–852	Tendon	807	695	4 182	3 194	5·2	4·6	0·5	0·4	1 489	13	....	....	
854–859	Fascia	180	65	966	431	5·4	6·6	0·1	0·0	245	....	....	....	
860–879	Amputation and Other Operations on Limbs	426	141	8 542	3 591	20·1	25·5	1·0	0·4	525	23	19		34
Sec. XIII														
880–889	Arteries	322	219	3 306	2 194	10·3	10·0	0·4	0·3	509	12	20		37
890–898	Veins	425	1 387	4 099	12 250	9·6	8·8	0·5	1·4	1 799	9	4		2
900–909	Lymphatics	89	98	1 239	1 035	13·9	10·6	0·1	0·1	179	4	4		21
910–929	Skin and Subcutaneous Tissue	5 583	4 784	30 407	24 491	5·4	5·1	3·5	2·8	10 279	79	9		1
930–939	Plastic Operations	877	584	9 118	6 056	10·4	10·4	1·0	0·7	1 451	7	3		2
Sec. XV														
940–950	Injection for General Action	1 798	3 143	6 257	8 401	3·5	2·7	0·7	1·0	4 813	37	91		18
952–959	Operations with Site Unspecified	8	13	39	80	4·9	6·2	0·0	0·0	20	1	....	....	
960–969	Non-Operative Procedures	487	547	2 739	4 065	5·6	7·4	0·3	0·6	1 001	25	8		8
970–979	Anaesthetic Procedures	140	342	439	1 940	3·1	5·7	0·0	0·2	478	3	1		2
980–999	Diagnostic Radiographic Techniques	715	816	11 812	11 615	16·5	14·2	1·3	1·3	1 374	66	91		59
	Total	51 125	74 321	384 236	495 140	7·5	6·7	43·7	56·3	123 301	1 332	813		6·5
	Grand Total, Male and Female	125 446		879 376		7·0		100·0						

TABLE 14

W.A. HOSPITALS 1975—AGE DISTRIBUTION OF OPERATION CASES BY SEX AND OPERATION

Code of Surgical Procedures	Operation Group	Five Year Age Group															Total All Ages
	MALES	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+	Not Stated	
001–049	Nervous System	31	37	20	68	170	200	279	237	262	270	245	210	159	94	140	2	2 424
061–089	Endocrine, System	38	7	9	20	27	19	19	16	22	30	35	26	22	20	16	2	328
100–189	Eye	325	159	99	89	137	123	118	83	142	138	120	154	138	170	308	1	2 304
190–249	Ear, Nose and Throat	914	1 823	659	540	499	439	348	277	223	229	192	159	147	128	158	2	6 737
250–299	Upper Alimentary Tract	292	399	203	263	302	231	127	108	124	107	96	107	93	71	81	2	2 606
300–349	Thorax	69	17	21	36	40	37	29	30	59	84	103	97	114	89	140	....	965
380–389	Breast	1	....	12	16	16	13	6	7	4	8	6	8	2	1	6	....	106
400–559	Abdomen	486	331	515	495	606	601	539	531	528	692	677	548	568	573	758	3	8 451
560–669	Urinary and Male Genital Organs	923	385	215	189	305	686	787	608	492	443	374	445	503	683	1 245	2	8 285
780–879	Orthopaedic	218	419	585	980	1 138	958	668	611	534	515	452	371	338	278	408	2	8 475
880–909	Peripheral Circulation	10	8	9	18	34	45	51	75	73	71	122	89	97	64	70	....	836
910–939	Skin and Subcutaneous Tissue	506	508	518	729	738	502	385	329	320	354	307	312	284	278	385	5	6 460
940–999	Other Surgical Procedures	192	137	86	268	314	149	198	176	373	187	211	256	185	147	265	4	3 148
Males	Total	4 005	4 230	2 951	3 711	4 326	4 003	3 554	3 088	3 156	3 128	2 940	2 782	2 650	2 596	3 980	25	51 125
	Rate/1 000 Males	72	77	52	69	86	77	85	86	99	98	102	130	133	165	183	N/A*	89
	FEMALES																	
001–049	Nervous System	41	19	26	62	101	138	165	175	204	231	184	160	110	90	131	1	1 838
061–089	Endocrine System	23	14	14	22	30	54	46	53	39	51	27	31	29	14	17	....	464
100–189	Eye	311	132	68	80	79	89	85	86	102	125	133	120	144	143	464	1	2 162
190–249	Ear, Nose and Throat	659	1 616	681	715	512	416	308	203	179	152	147	114	90	85	103	4	5 984
250–299	Upper Alimentary Tract	224	391	302	462	499	316	185	141	99	123	120	80	87	76	89	6	3 200
300–349	Thorax	51	25	14	20	28	18	20	13	22	32	48	47	52	49	50	....	489
380–389	Breast	2	2	12	100	243	379	391	272	273	256	152	62	45	65	100	1	2 355
400–559	Abdomen	202	266	518	893	949	952	605	528	516	580	520	420	459	377	620	4	8 409
560–669	Urinary and Female Genital Organs	43	56	37	68	154	201	141	179	167	175	174	132	204	153	295	....	2 179
671–739	Female Genital Tract	11	13	44	907	2 901	4 265	3 640	2 672	1 916	1 395	861	339	265	165	217	14	19 625
740–779	Obstetric	....	....	41	1 426	3 129	2 962	1 262	483	157	16	1	1	....	....	....	2	9 480
780–879	Orthopaedic	185	291	406	466	387	352	356	381	375	379	440	414	432	376	959	4	6 203
880–909	Peripheral Circulation	10	6	25	19	58	149	232	244	219	220	175	103	95	63	86	....	1 704
910–939	Skin and Subcutaneous Tissue	376	445	497	609	433	436	351	292	307	302	288	249	226	170	382	5	5 368
940–999	Other Surgical Procedures	174	66	116	299	238	242	242	317	691	504	859	341	240	178	352	2	4 861
Females	Total, including Obstetrics	2 312	3 342	2 801	6 148	9 741	10 969	8 029	6 039	5 266	4 541	4 129	2 613	2 478	2 004	3 865	44	74 321
	Rate/1 000 Females	44	53	53	121	208	235	218	181	180	157	153	119	118	116	123	N/A	135
Females	Total, excluding obstetrics	2 312	3 342	2 760	4 722	6 612	8 007	6 676	5 556	5 109	4 113	4 129	2 613	2 478	2 004	3 865	44	64 841
	Rate/1 000 Females	44	53	52	93	141	171	184	167	175	142	153	119	118	116	123	N/A	118
All Persons	Total	6 317	7 572	5 752	9 859	14 067	14 972	11 583	9 127	8 422	7 669	7 069	5 395	5 128	4 600	7 845	69	125 446
	Rate/1 000 Persons	58	70	52	94	145	152	148	132	138	126	127	124	125	139	148	N/A	112

* N/A = Not Applicable.

TABLE 15

AGE AND SEX SPECIFIC OPERATION RATES*—W.A. HOSPITALS 1971-1975

Year	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+	N/S	Total
MALES																	
1971	62	72	51	61	70	64	66	73	80	81	85	99	121	131	151	N/A	76
1972	56	77	52	61	71	69	78	83	83	86	95	108	126	149	171	N/A	81
1973	66	76	52	63	76	72	76	87	90	88	98	110	124	151	172	N/A	83
1974	69	76	51	65	77	78	76	84	95	89	102	120	131	149	178	N/A	85
1975	72	77	52	69	86	77	85	86	99	98	102	130	133	165	183	N/A	89
FEMALES INCLUDING OBSTETRIC																	
1971	38	65	47	108	178	193	173	144	120	112	106	88	91	94	104	N/A	108
1972	40	69	51	116	198	227	192	162	136	213	118	102	96	108	115	N/A	120
1973	41	65	48	112	192	217	195	171	135	128	124	104	101	114	115	N/A	120
1974	45	64	49	118	202	218	211	172	152	147	128	109	104	108	116	N/A	126
1975	44	53	53	121	208	235	218	181	180	157	153	119	118	116	123	N/A	135
FEMALES EXCLUDING OBSTETRIC																	
1971	38	65	47	79	113	129	136	125	114	112	106	88	91	94	104	N/A	108
1972	40	69	50	82	123	153	154	118	129	118	118	102	96	108	115	N/A	120
1973	41	65	47	82	128	153	163	155	131	110	124	104	101	114	115	N/A	103
1974	45	64	49	88	140	160	180	157	148	147	128	109	104	108	116	N/A	110
1975	44	53	52	93	141	171	184	167	175	142	153	119	118	116	123	N/A	118
TOTAL PERSONS																	
1971	50	68	49	84	121	124	117	130	99	96	95	94	106	113	124	N/A	91
1972	53	74	52	88	132	142	132	121	107	99	106	105	111	130	138	N/A	100
1973	54	70	50	87	132	140	133	127	111	107	110	107	113	132	139	N/A	101
1974	57	70	50	91	137	133	140	126	122	117	115	67	117	127	141	N/A	105
1975	58	70	52	94	145	152	148	132	138	126	127	124	125	139	148	N/A	112

* All Rates per 1 000 population, based on Australian Bureau of Statistics Data:
1971—Actual Census
1972–75—Estimated, Subject to revision after 1976 Census.
N/A—Not Applicable.

TABLE 16

W.A. HOSPITALS 1975—PATIENTS DISCHARGED BY OPERATION GROUP AND TYPE OF HOSPITAL

Code of Surgical Procedures	Operation Groups	Discharges							Days in Hospital							Average Number of Days in Hospital				Percentage of Total Bed Days			
		Teaching		Private		Other Govt. and Board		All Hospitals	Teaching		Private		Other Govt. and Board		All Hospitals	Teaching	Private	Other Govt. and Board	All Hospitals	Teaching	Private	Other Govt. and Board	All Hospitals
		No.	% for Group	No.	% for Group	No.	% for Group		No.	% for Group	No.	% for Group	No.	% for Group									
001–049	Nervous System	2 440	57·25	1 283	30·10	539	12·65	4 262	37 051	75·45	8 186	16·67	3 867	7·88	49 104	15·2	6·4	7·8	11·5	4·21	0·93	0·44	5·58
061–089	Endocrine System	520	65·66	191	24·12	81	10·23	792	8 100	80·65	1 387	13·81	557	5·55	10 044	15·6	7·3	6·9	12·7	0·92	0·16	0·06	1·14
100–189	Eye	1 775	39·74	2 104	47·11	587	13·14	4 466	16 747	58·40	8 560	29·85	3 371	11·75	28 678	9·4	4·1	5·7	6·4	1·90	0·97	0·38	3·26
190–249	Ear, Nose and Throat	3 291	25·87	6 472	50·88	2 958	23·25	12 721	15 518	33·75	19 640	42·71	10 825	23·54	45 983	4·7	3·0	3·7	3·6	1·76	2·23	1·23	5·23
250–299	Upper Alimentary Tract	1 216	20·94	1 939	33·40	2 651	45·66	5 806	8 061	48·01	3 821	22·76	4 908	29·23	16 790	6·6	2·0	1·9	2·9	0·92	0·43	0·56	1·91
300–349	Thorax	1 381	94·98	24	1·65	49	3·37	1 454	19 830	94·39	218	1·04	960	4·57	21 008	14·4	9·1	19·6	14·4	2·26	0·02	0·11	2·39
380–389	Breast	373	15·16	1 345	54·65	743	30·19	2 461	3 367	22·62	7 806	52·43	3 715	24·95	14 888	9·0	5·8	5·0	6·0	0·38	0·89	0·42	1·69
400–559	Abdomen	6 314	37·45	5 104	30·27	5 442	32·28	16 860	72 923	44·81	43 176	26·53	46 652	28·66	162 751	11·5	8·5	8·6	9·7	8·29	4·91	5·31	18·51
560–669	Urinary and Male Genital Organs	3 716	35·51	3 771	36·04	2 977	28·45	10 464	31 368	49·76	15 171	24·07	16 496	26·17	63 035	8·4	4·0	5·5	6·0	3·57	1·73	1·88	7·17
671–739	Female Genital Tract	3 029	15·43	6 695	34·11	9 901	50·45	19 625	20 824	22·03	33 035	34·96	40 646	43·01	94 505	6·9	4·9	4·1	4·8	2·37	3·76	4·62	10·75
740–779	Obstetric	3 587	37·84	2 968	31·31	2 925	30·85	9 480	28 131	38·18	24 700	33·53	20 845	28·29	73 676	7·8	8·3	7·1	7·8	3·20	2·81	2·37	8·38
780–879	Orthopaedic	6 646	45·28	4 536	30·90	3 496	23·82	14 678	100 705	64·01	26 569	16·89	30 058	19·10	157 332	15·2	5·9	8·6	10·7	11·45	3·02	3·42	17·89
880–909	Peripheral Circulation	849	33·43	1 084	42·68	607	23·90	2 540	10 114	41·93	8 751	36·28	5 258	21·80	24 123	11·9	8·1	8·7	9·5	1·15	1·00	0·60	2·74
910–939	Skin and Subcutaneous Tissue	3 561	30·11	3 872	32·74	4 395	37·16	11 828	32 945	47·02	16 766	23·93	20 361	29·06	70 072	9·3	4·3	4·6	5·9	3·75	1·91	2·32	7·97
940–999	Other Surgical Procedures	6 421	80·17	872	10·89	716	8·94	8 009	38 200	80·61	6 009	12·68	3 178	6·71	47 387	5·9	6·9	4·4	5·9	4·34	0·68	0·36	5·39
	Total, All Operations	45 119	35·97	42 260	33·69	38 067	30·35	125 446	443 884	50·48	223 795	25·45	211 697	24·07	879 376	9·8	5·3	5·6	7·0	50·48	25·45	24·07	100·00

TABLE 17

W.A. HOSPITALS 1975—PATIENTS DISCHARGED BY OPERATION GROUP AND TYPE OF HOSPITAL

Code of Surgical Procedures	Operation Groups	Discharges														State Total
		Metropolitan								Country						
		Teaching		Private		Government		Total		Private		Govt. and Board		Total		
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
001–049	Nervous System	2 440	57·25	1 247	29·26	312	7·32	3 999	93·83	36	·84	227	5·33	263	6·17	4 262
061–089	Endocrine System	520	65·66	185	23·36	56	7·07	761	96·09	6	·76	25	3·16	31	3·91	792
100–189	Eye	1 775	39·74	2 070	46·35	409	9·16	4 254	95·25	34	·76	178	3·99	212	4·75	4 466
190–249	Ear, Nose and Throat	3 291	25·87	6 284	49·40	1 738	13·66	11 313	88·93	188	1·48	1 220	9·59	1 408	11·07	12 721
250–299	Upper Alimentary Tract	1 216	20·94	1 544	26·59	961	16·55	3 721	64·09	395	6·80	1 690	29·11	2 085	35·91	5 806
300–349	Thorax	1 381	94·98	21	1·44	39	2·68	1 441	99·11	3	·21	10	·69	13	·89	1 454
380–389	Breast	373	15·16	1 295	52·52	481	19·54	2 149	87·32	50	2·03	262	10·65	312	12·68	2 461
400–559	Abdomen	6 314	37·45	4 703	27·89	3 123	18·52	14 140	83·87	401	2·34	2 319	13·75	2 720	16·13	16 860
560–669	Urinary and Male Genital Organs	3 716	35·51	3 520	33·64	1 794	17·14	9 030	86·30	251	2·40	1 183	11·31	1 434	13·70	10 464
671–739	Female Genital Tract	3 029	15·43	6 403	32·63	6 124	31·21	15 556	79·27	292	1·49	3 777	19·25	4 069	20·73	19 625
740–779	Obstetric	3 587	37·84	2 887	30·45	1 659	17·50	8 133	85·79	81	·85	1 266	13·35	1 347	14·21	9 480
780–879	Orthopaedic	6 646	45·28	4 310	29·36	1 676	11·42	12 632	86·06	226	1·54	1 820	12·40	2 046	13·94	14 678
880–909	Peripheral Circulation	849	33·43	1 031	40·59	317	12·48	2 197	86·50	53	2·09	290	11·42	343	13·50	2 540
910–939	Skin and Subcutaneous Tissue	3 561	30·11	3 650	30·86	2 318	19·60	9 529	80·56	222	1·88	2 077	17·56	2 299	19·44	11 828
940–999	Other Surgical Procedures	6 421	80·17	716	8·94	183	2·28	7 320	91·40	156	1·95	533	6·66	689	8·60	8 009
	Total, All Operations	45 119	35·97	39 866	31·78	21 190	16·89	106 175	84·64	2 394	1·91	16 877	13·45	19 271	15·36	125 446

TABLE 18

W.A. HOSPITALS—ACCIDENTS, POISONING AND VIOLENCE DISCHARGED DURING 1975

I.C.D. Category	External Cause	Number of Cases		Number Days in Hospital		Average Number Days in Hospital		Per cent of Total Bed Days		Outcome			
		Male	Female	Male	Female	Male	Female	Male	Female	Discharged	Transferred	Died	Deaths per 1 000 Separations
800–807	Railway Accidents	25	9	901	81	36·0	9·0	0·34	0·03	30	3	1	29
810–819	Motor Vehicle Traffic Accidents	3 268	1 442	34 967	14 851	10·7	10·3	13·09	5·56	4 406	245	59	12
820–823	Motor Vehicle Non-Traffic Accidents	186	23	1 720	324	9·2	14·1	0·64	0·12	203	5	1	4
825–827	Other Road Vehicle Accidents	261	209	1 646	889	6·3	4·3	0·62	0·33	456	12	2	4
830–838	Water Transport Accidents	56	8	757	20	13·5	2·5	0·28	0·01	63	....	1	15
840–845	Air and Space Transport Accidents	10	1	107	6	10·7	6·0	0·04	0·00	11	....	....	....
850–859	Accidental Poisoning by Drugs and Medicaments	329	319	1 536	1 865	4·7	5·8	0·57	0·70	630	12	6	9
860–869	Accidental Poisoning by Other Solid and Liquid Substances	403	274	914	671	2·3	2·4	0·34	0·25	669	6	2	2
870–877	Accidental Poisoning by Gases and Vapours	54	8	140	29	2·6	3·6	0·05	0·01	60	2	....	....
880–887	Accidental Falls	4 000	2 962	31 239	35 478	7·8	12·0	11·69	13·28	6 440	431	91	13
890–899	Accidents Caused by Fires and Flames	547	260	6 242	2 634	11·4	10·1	2·34	0·99	771	31	5	6
900–909	Accidents due to Natural and Environmental Factors	543	334	2 129	1 175	3·9	3·5	0·80	0·44	857	15	5	5
910–929	Other Accidents	7 456	3 045	37 130	14 695	5·0	4·8	13·90	5·50	10 220	236	45	4
930–936	Surgical and Medical Complications and Misadventures	1 207	1 275	15 861	17 768	13·1	13·9	5·94	6·65	2 325	73	84	33
940–949	Late Effects of Accidental Injury	1 162	626	15 990	8 911	13·7	14·2	5·99	3·34	1 729	38	21	11
950–959	Suicide and Self Inflicted Injury	463	941	3 012	4 671	6·5	5·0	1·13	1·75	1 288	102	14	9
960–969	Homicide and Injury Purposely Inflicted by Other Persons	719	337	3 998	2 321	5·6	6·9	1·50	0·87	1 024	23	9	8
970–978	Legal Intervention	2	....	2	....	1·0	....	0·00	....	2	....	....	....
980–989	Injury Undetermined Whether Accidentally or Purposely Inflicted	155	273	1 300	1 029	8·4	3·8	0·49	0·39	394	29	5	11
990–999	Injury Resulting from Operations of War	5	....	131	....	26·2	....	0·05	....	5	....	....	....
	Total	20 851	12 346	159 722	107 418	7·7	8·7	59·80	40·22	31 583	1 263	351	10·6
	Grand Total, Male and Female	33 197		267 140		8·0		100·00					

I.C.D. Code		Burn		Injury to Nerves and Spinal Cord		Adverse Effect of Medicinal Agents		Adverse Effect of Non-Medicinal Substances		Other Adverse Effects		Total	
	939	N940–N949		N950–N959		N960–N979		N980–N989		N990–N999			
	F	M	F	M	F	M	F	M	F	M	F	M	F
E800–80	....	..	..	2		....	...	1	....	..	....	25	9
	....	..	....	49	..	....	....	23	....	....	....	35	34
	....	....	....	4·0	....	....	....	1·0	....	....	....	36·0	9·0
E810–81	....	10	4	16	3	....	....	....	....	380	224	3 254	1 436
	....	22	20	29	24	....	....	....	....	25	28	26	29
	....	18·9	5·0	15·2	2·3	....	....	....	....	3·5	4·0	10·7	10·3
E820–82	....	3	....	...	..	....	....	....	....	8	....	185	23
	....	25	....	....	....	....	....	....	....	22	....	21	15
	....	31·7	....	....	....	....	....	....	....	1·5	....	9·3	14·1
E825–82	....	1	....	1	2	....	....	....	....	17	21	260	209
	....	3	....	20	15	....	....	....	....	24	16	17	16
	....	20·0	....	7·0	23·5	....	....	....	....	2·9	3·4	6·3	4·3
E830–83	....	2	....	..	...	....	....	....	....	7	....	52	8
	....	34	....	..	....	....	....	....	....	28	....	32	44
	....	11·0	....	..	....	....	....	....	....	3·1	....	13·7	2·5
E840–84	....	....	....	..	....	....	....	....	....	....	....	10	1
	....	....	....	..	....	....	....	....	....	....	....	30	23
	....	....	....	..	....	....	....	....	....	....	....	10·7	6·0
E850–85	....	....	1	..	....	275	261	2	2	1	....	278	265
	....	....	22	..	....	11	14	2	3	20	....	11	14
	....	....	2·0	..	....	2·2	4·4	1·0	1·0	4·0	....	2·2	4·3
E860–86	....	1	....	..	....	....	....	394	269	....	....	396	269
	....	2	....	....	....	....	....	5	4	....	....	5	4
	....	1·0	....	....	....	....	....	2·2	2·2	....	....	2·2	2·2
E870–87	....	....	....	....	....	....	....	52	7	....	....	53	7
	....	....	....	....	....	....	....	28	19	....	....	28	19
	....	....	....	....	....	....	....	1·8	1·6	....	....	1·8	1·6
E880–88	....	1	....	7	3	3	1	...	....	130	97	3 927	2 896
	....	39	....	44	37	56	58	....	....	33	43	29	44
	....	53·0	....	22·6	6·0	10·7	1·0	....	....	3·8	6·5	7·6	11·6
E890–89	....	533	251	...	....	....	..	3	2	2	2	543	258
	....	21	21	....	....	....	....	19	19	12	39	21	21
	....	11·4	9·7	....	....	....	....	3·7	1·0	31·5	1·0	11·3	9·5
E900–90	....		....	1	....	....	1	301	154	94	48	533	326
	....	....	....	31	....	....	18	22	22	42	48	26	25
	....	....	....	4·0	...	....	3·0	1·6	1·5	7·0	6·1	3·7	3·4
E910	....	....	....	1	....	....	....	....	...	36	27	50	28
	....	....	....	8	....	....	....	....	....	14	6	15	7
	....	....	....	1·0	....	....	....	....	....	1·9	1·6	3·1	1·6
E911–9	67	....	....	....	....	....	....	....	....	....	....	74	68
	40	....	....	....	....	....	....	....	....	....	....	28	40
	1·9	....	....	....	....	....	....	....	....	....	....	2·0	1·9
E914–9	192	4	1	....	....	....	....	....	....	....	....	280	198
	20	26	1	....	....	....	....	....	....	....	....	23	20
	2·0	5·0	15·0	....	....	....	....	....	....	....	....	2·3	2·1
E920	...	....	1	12	2	....	....	1	....	10	1	1 984	855
	..	..	2	28	32	....	....	23	....	23	47	27	27
	....	....	1·0	7·6	1·5	....	....	1·0	....	3·7	1·0	4·0	4·1
E913	2	425	134	25	10	1	....	1	1	1 052	401	4 963	1 846
E916–9	36	20	19	29	29	7	....	32	21	31	38	26	28
E921–9	5·0	9·0	12·2	7·3	2·7	1·0	....	1·0	1·0	5·7	6·9	5·5	5·4
E930–9	3	3	1	....	1	102	183	1	3	591	544	704	750
	39	53	....	....	77	49	53	0	30	36	33	37	38
	3·3	22·3	17·0	....	3·0	8·7	9·8	1·0	2·7	6·6	6·3	3·9	7·1
E940–9	1	51	25	32	14	2	4	1	....	316	237	850	470
	12	18	12	33	46	36	64	60	....	44	50	35	42
	19·0	15·5	14·5	6·3	5·6	10·5	12·8	2·0	....	12·4	11·9	12·4	12·3
E950–9	...	2	1	..	1	332	866	29	20	17	8	438	930
	..	31	75	....	67	31	31	39	34	25	24	31	31
		10·5	29·0	....	22·0	4·1	4·2	6·9	13·7	7·6	5·6	5·6	4·8
E960–9	....	3	1	3	.	2	....	2	..	43	63	699	326
	....	30	52	30	.	46	...	15	..	24	26	31	32
	....	4·3	22·0	7·0	....	10·0	....	5·0	....	7·5	12·0	5·4	6·8
E970–9	....			..	....	...	....	....	....	...	..	2	....
	....	....		...	....	...	....	....	....	....	....	26	....
	....	....	....	....	....	..	....	....	....	....	....	1·0	....
E980–9	....	....	1	....	....	92	243	26	8	3	1	145	263
	....	....	50	....	..	33	30	30	55	34	27	33	31
	....	....	9·0	....	..	3·3	2·6	13·3	9·8	16·7	2·0	8·2	3·2
E990–9	....	....		....	....	....	....		..	....	....	2	....
	....	....	..	....	....	....	....	....	....	....	....	66	....
	....	....		....	....	....	....	....	....	....	....	17·5	....
	265	1 039	421	100	36	809	1 559	814	466	2 707	1 674	19 707	11 441
	25	21	20	32	37	27	30	15	12	33	36	27	32
	2·0	10·8	10·8	9·2	5·7	4·0	4·7	2·5	2·6	6·2	7·0	7·0	7·7

PUBLIC HEALTH DEPARTMENT

REVENUE FOR YEAR ENDED 31/12/75

	$	$
LICENSES—		
Anatomy	232	
Fumigation	44	
Maternity Homes	10	
Poisons Act	8 890	
Radioactive Substances Act	1 170	
Optical Dispensers	115	
Private Hospitals	3 177	
Clean Air Act	14 864	
		28 502
FEES—		
Fish Inspection	5 017	
Meat Inspection	562 370	
Building Inspection	6 084	
Perth Medical Officers	1 103	
Pest Control Collections	2 756	
Pesticides Registration	3 865	
Photographic Charges	222	
Sanitary Fixtures	13	
Septic Tank Plans	46 150	
		627 580
MISCELLANEOUS—		
Other	37 109	
Staff Rents	24 254	
Sale of Biscuits	761	
Miners X-Ray Recoups	4 800	
Commonwealth Grant	7 487 167	
		7 554 091
LABORATORIES—		
Fees and Services		535 569
DENTAL—		
Fees		245 594
TUBERCULOSIS CONTROL—		
Maintenance Recoup from Commonwealth	1 050 292	
Capital Recoup from Commonwealth	....	
Health Vote—Base Year Transfer	155 702	
Administration	75 493	
		1 281 487
GRAND TOTAL		$ 10 272 823

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